

+

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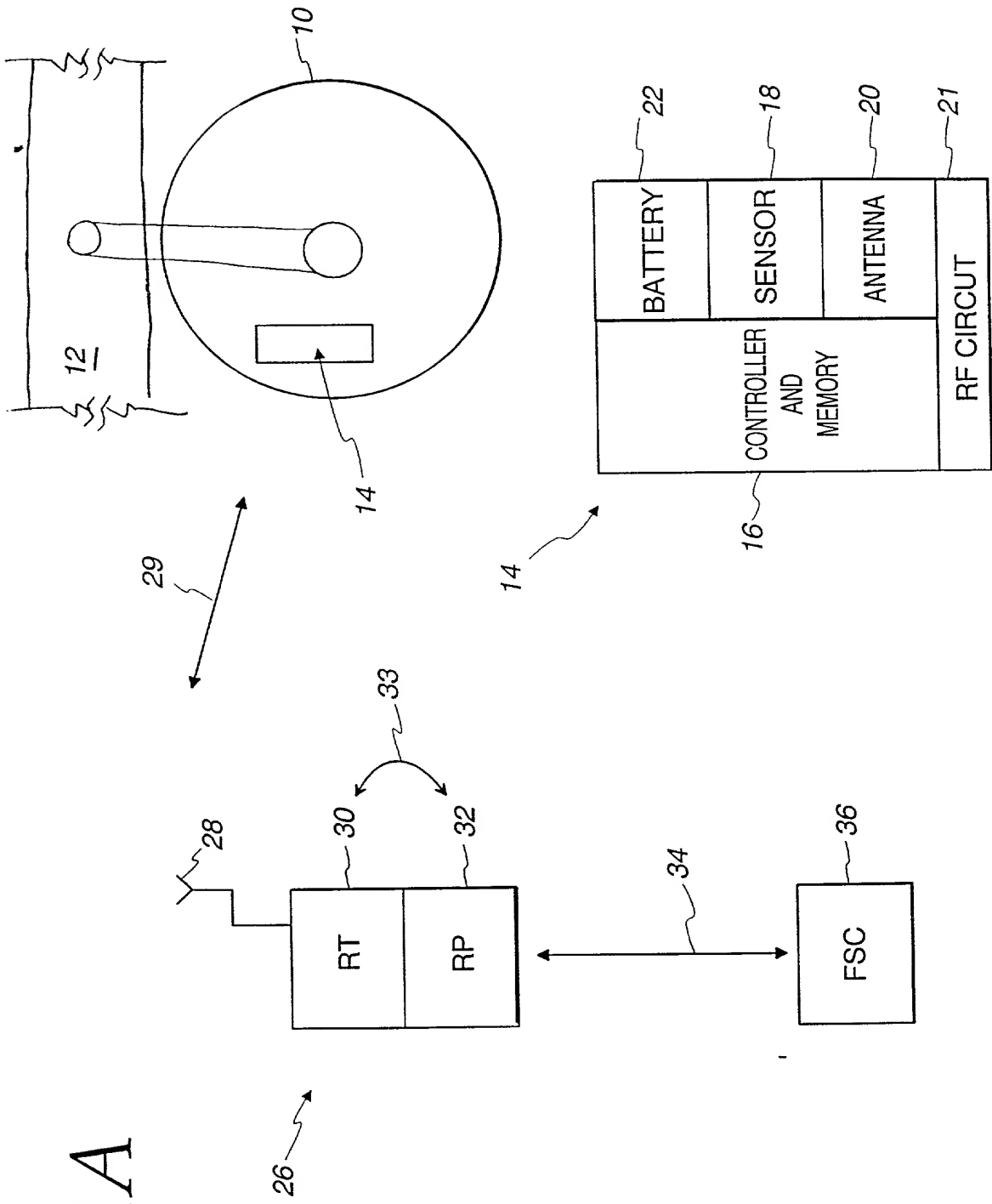


Fig. 1A

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Fig 1B

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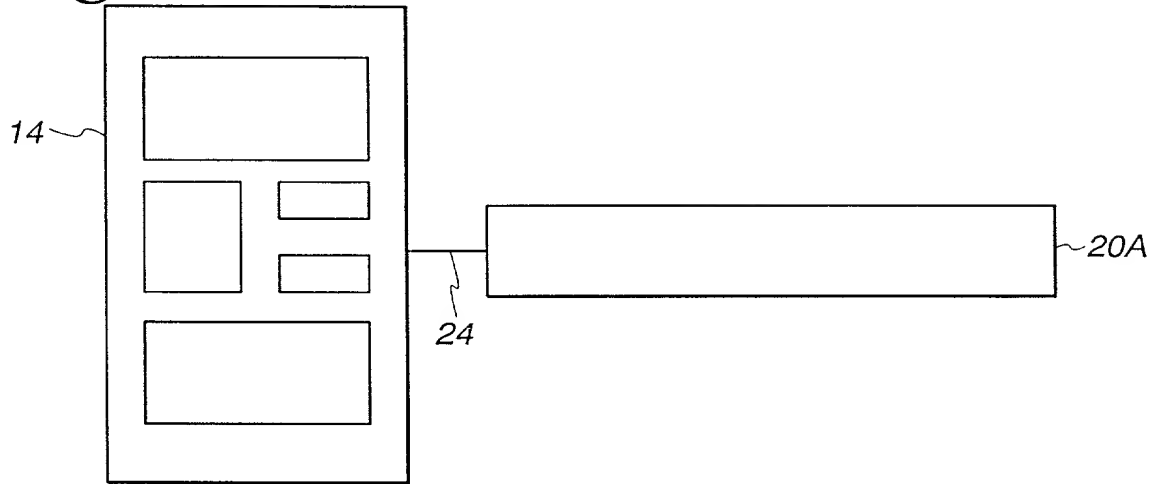


Fig 1C

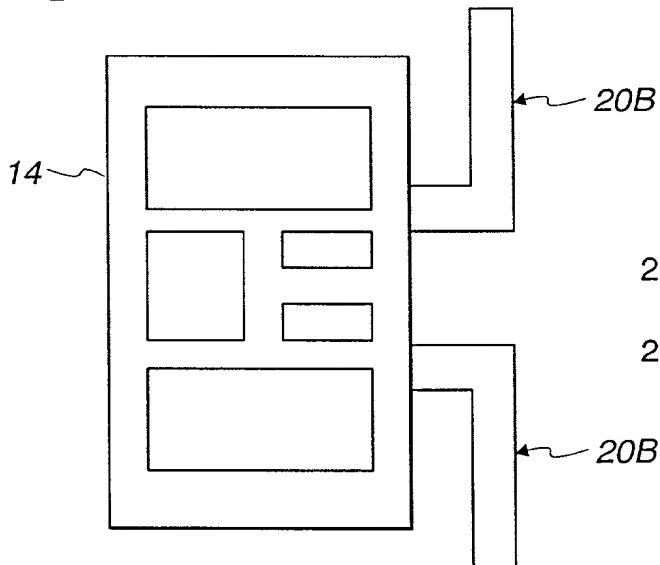


Fig 1D

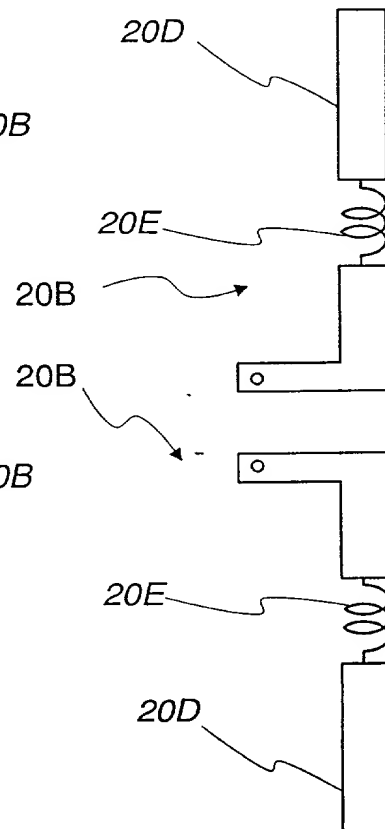
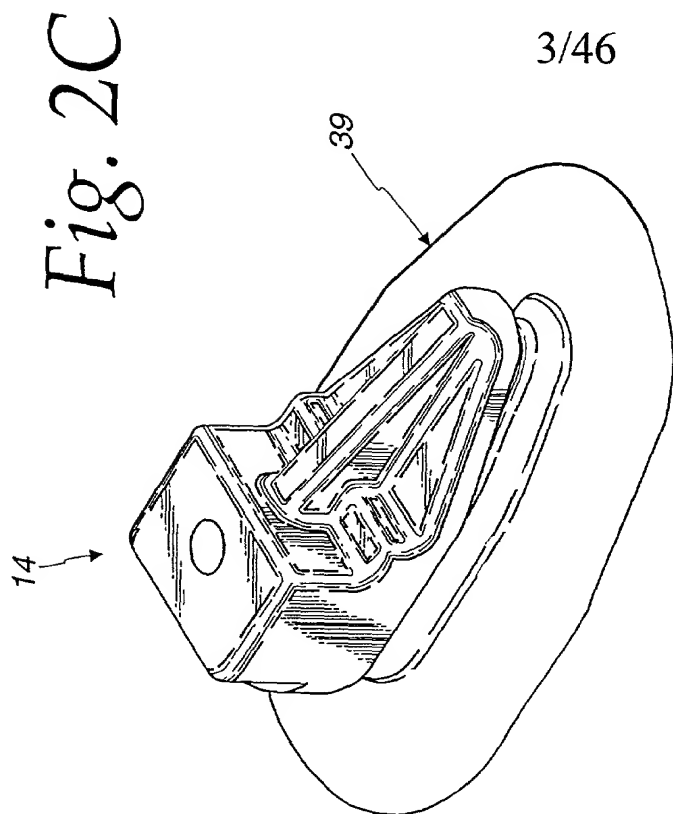
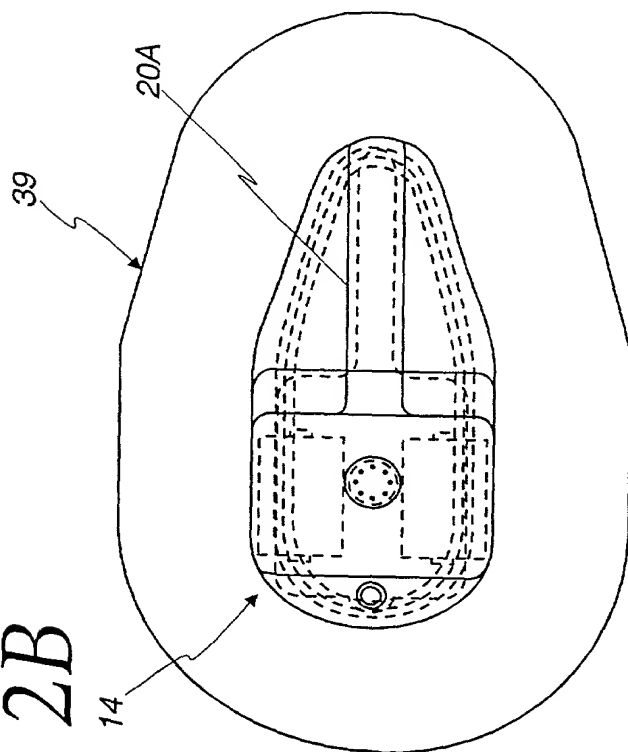
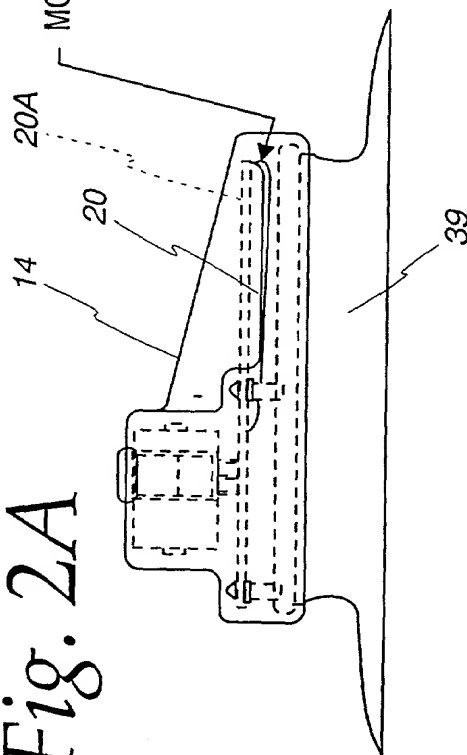


Fig. 2B



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Fig. 2A



MONOPOLE ANTENNA WIRE

Fig. 2D

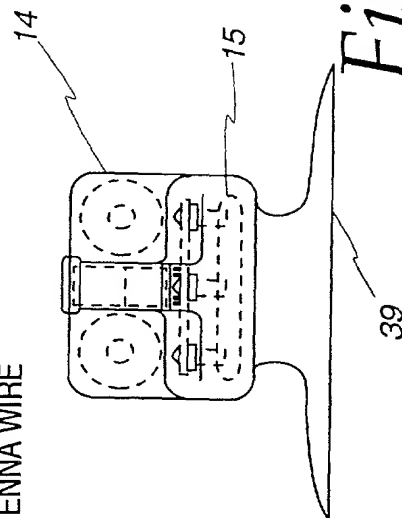


Fig. 3C

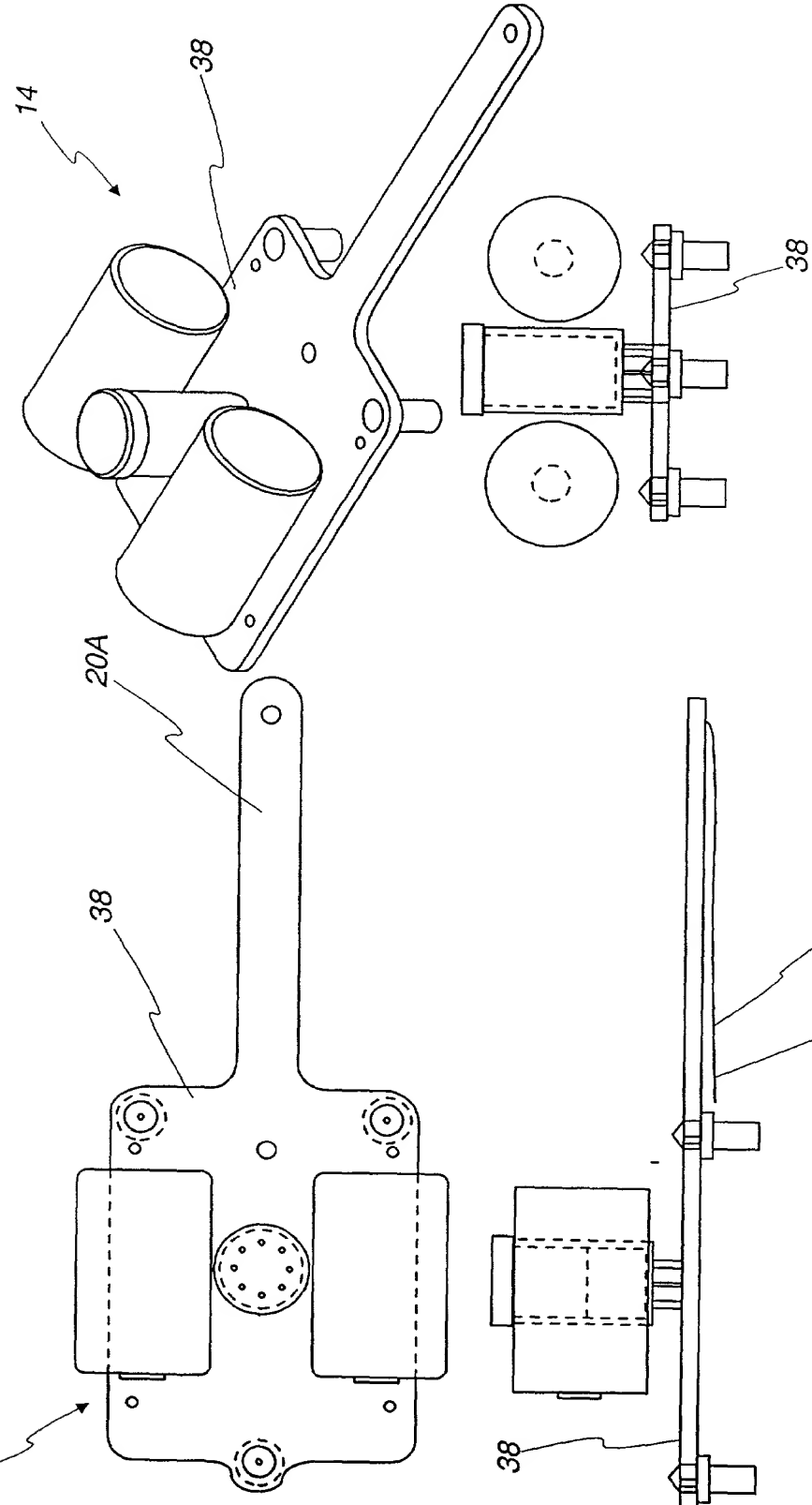


Fig. 3D

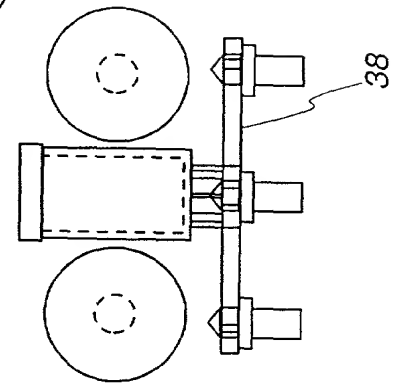


Fig. 3B

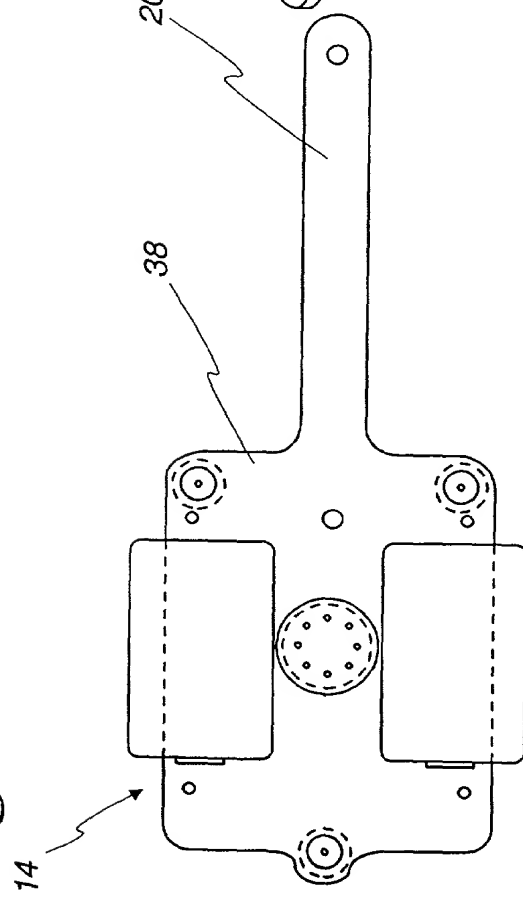


Fig. 3A

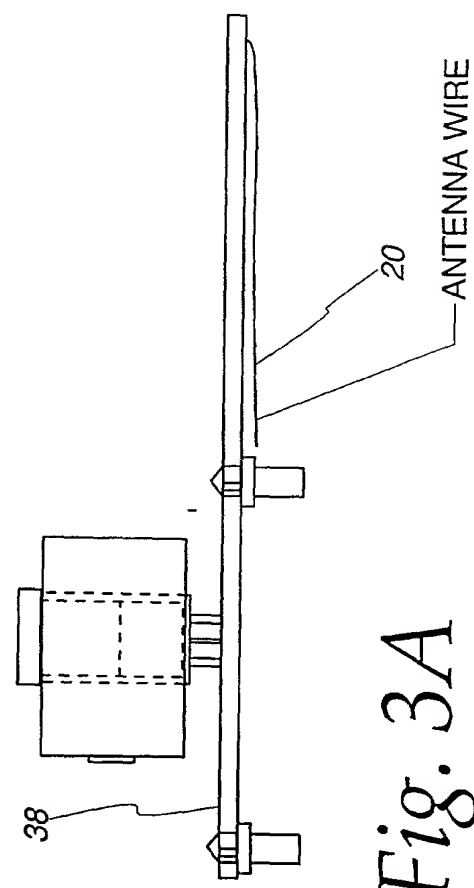


Fig. 4B Fig. 4A

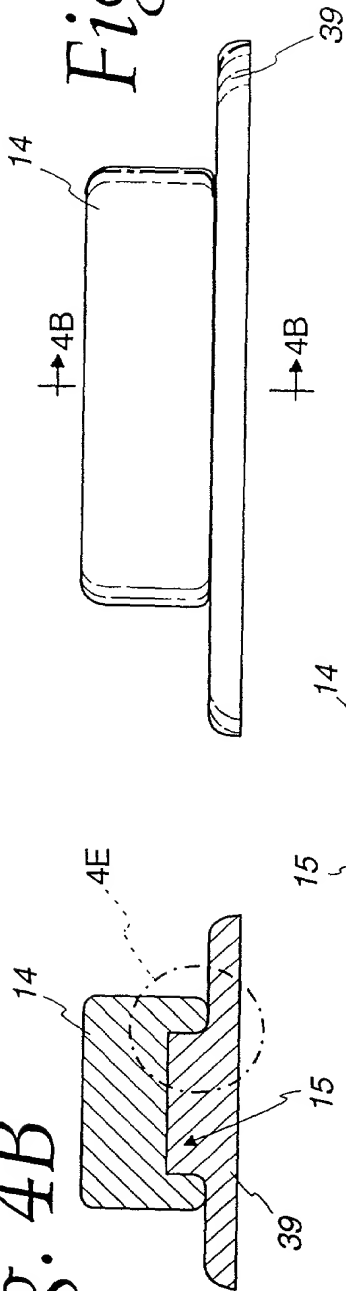


Fig. 4C

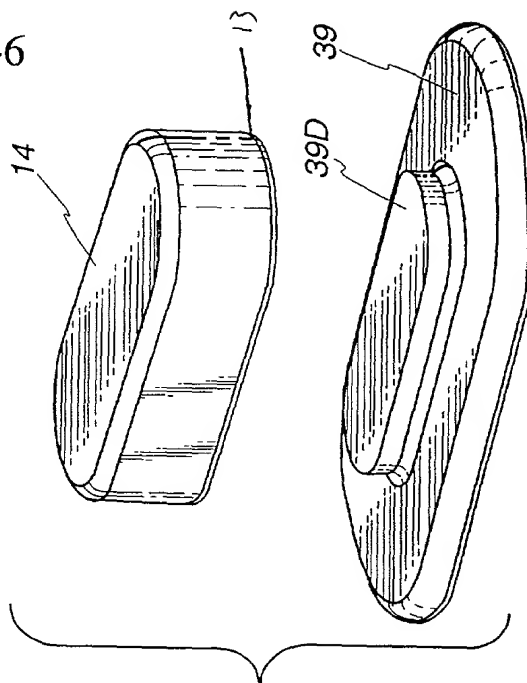


Fig. 4E

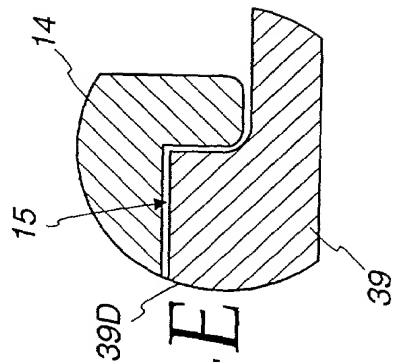


Fig. 4D

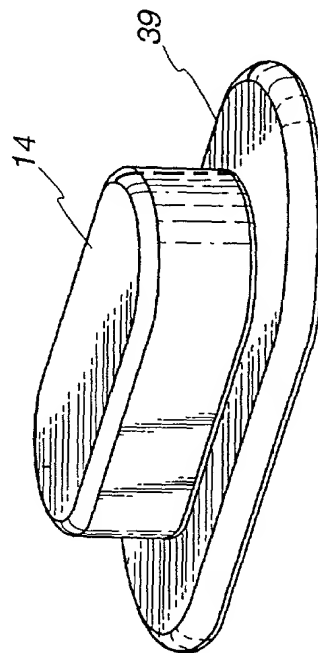


Fig. 5B

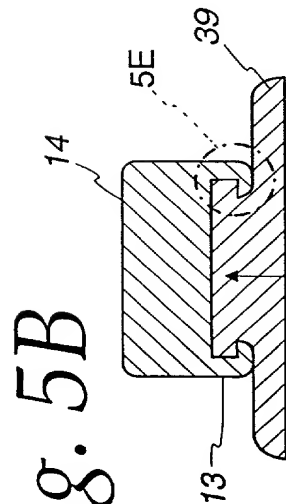


Fig. 5A

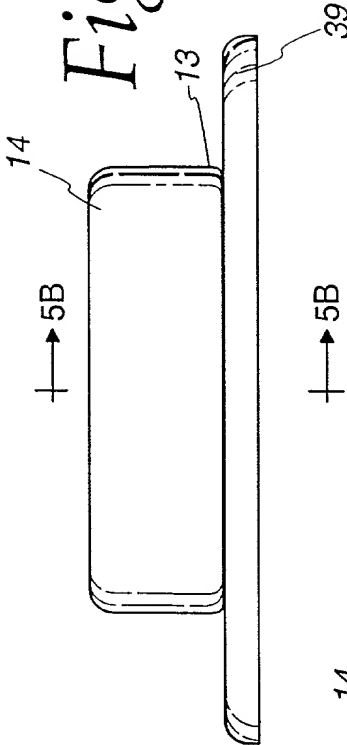


Fig. 5E

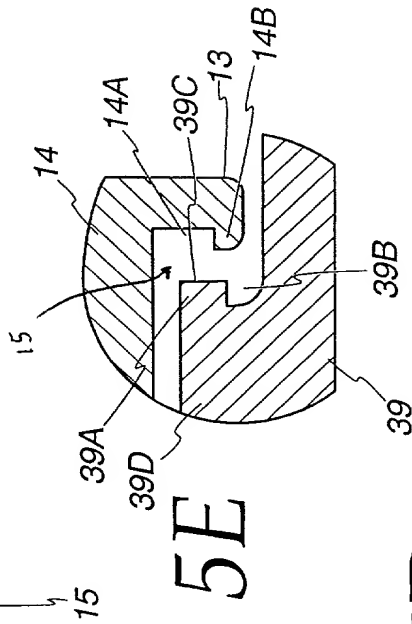


Fig. 5D

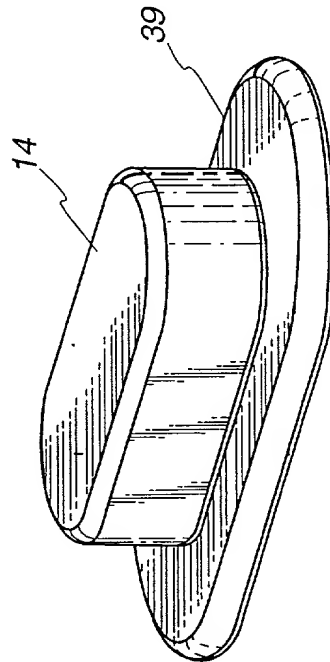
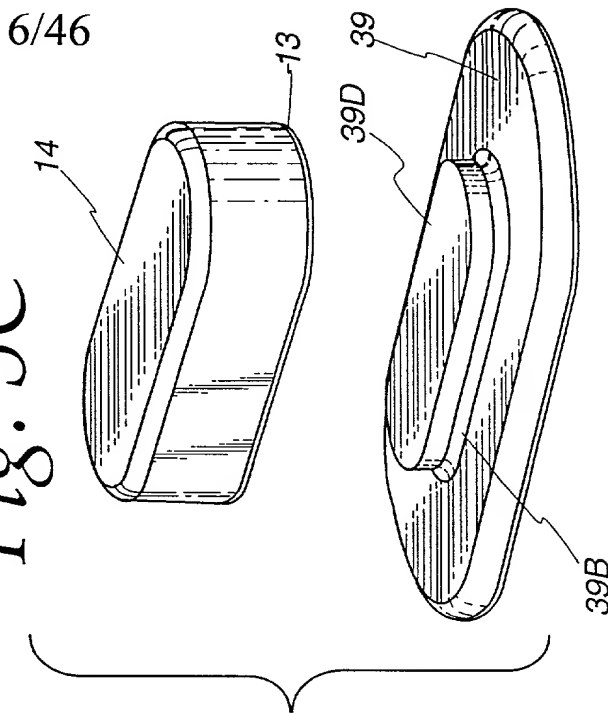


Fig. 5C



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Fig. 6A

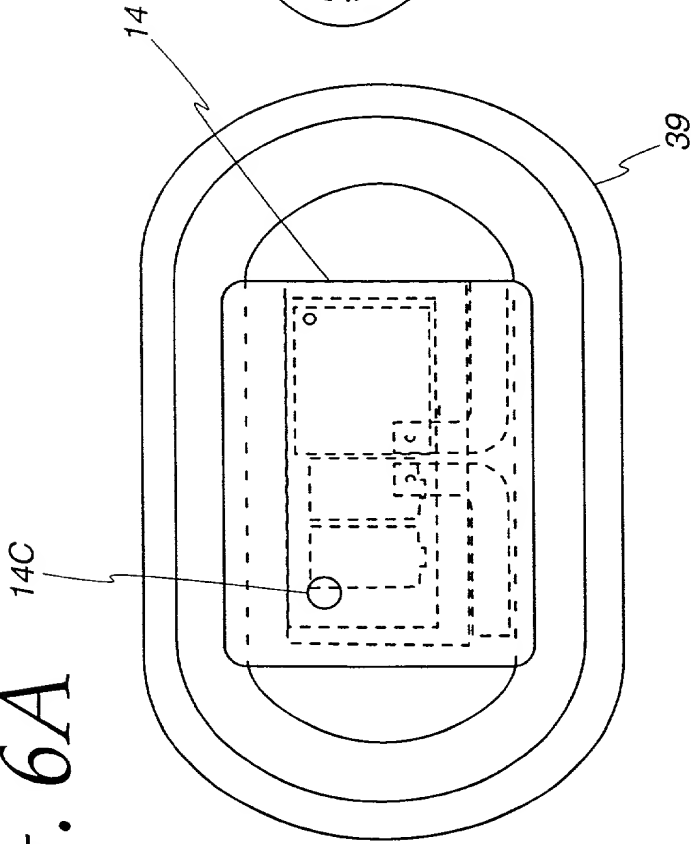
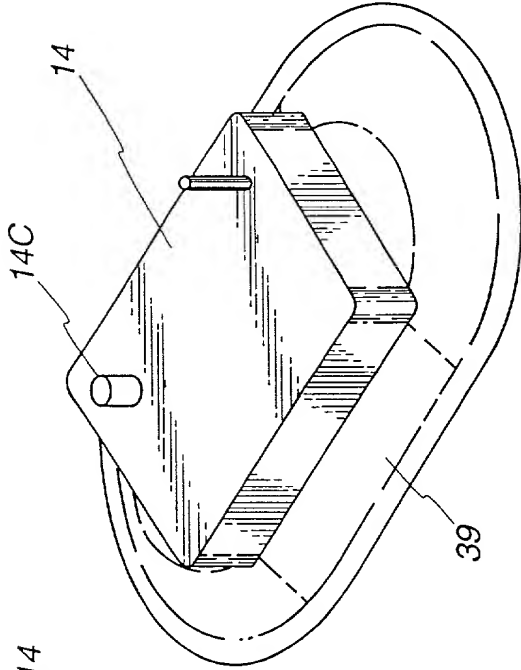


Fig. 6C



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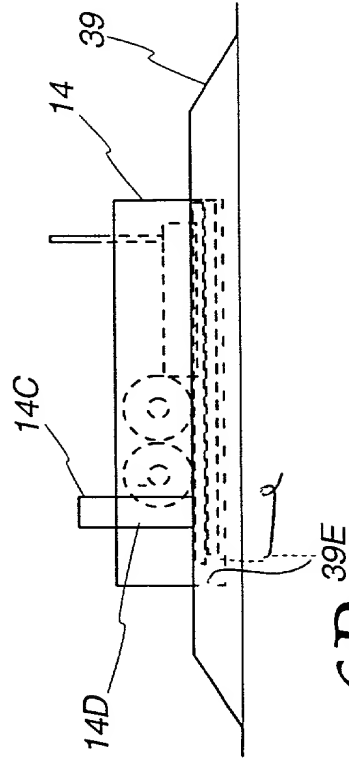


Fig. 6B

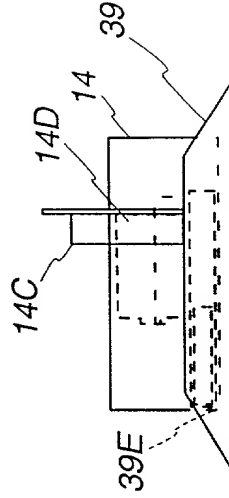


Fig. 6D

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Fig. 6E

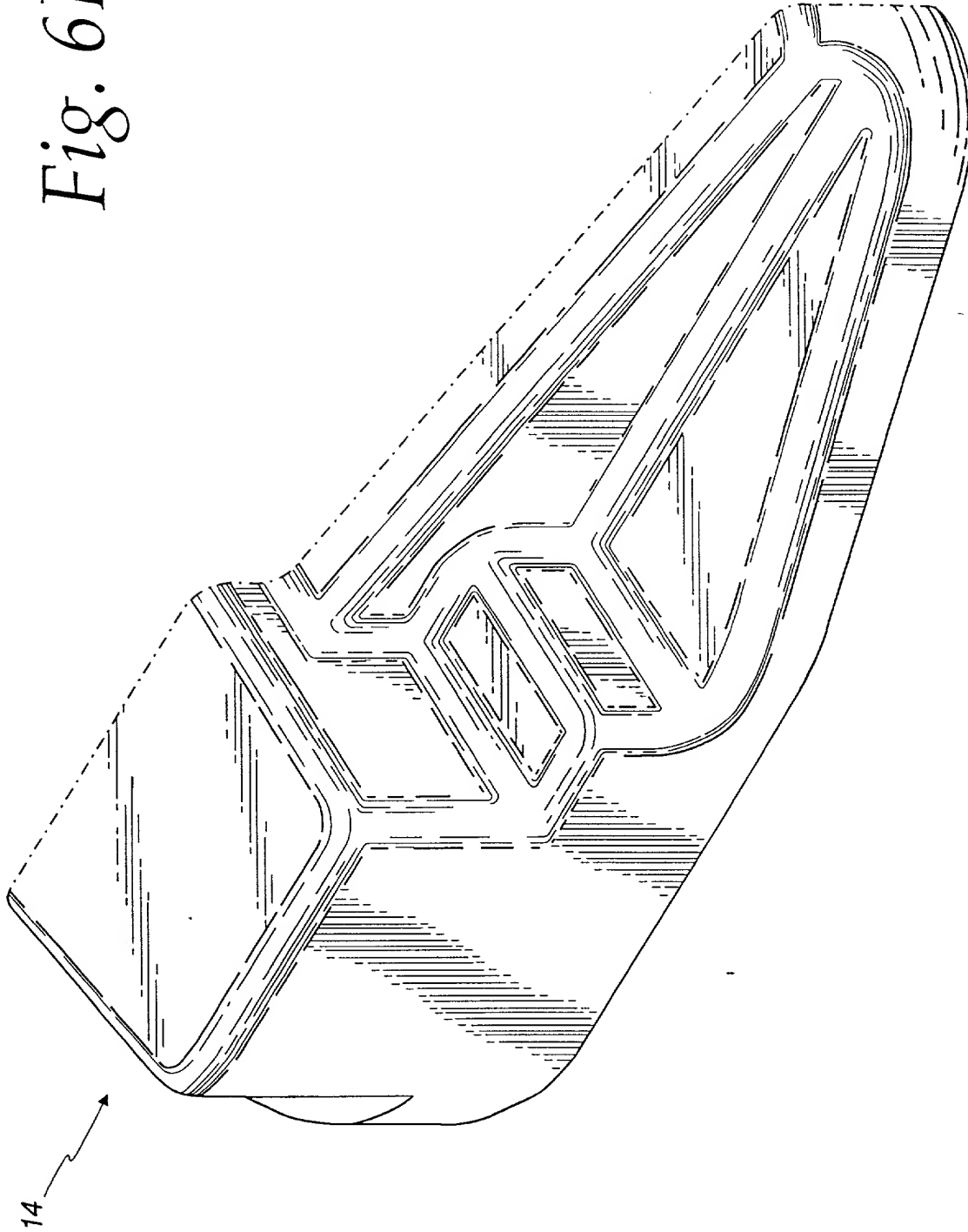


FIG. 6E

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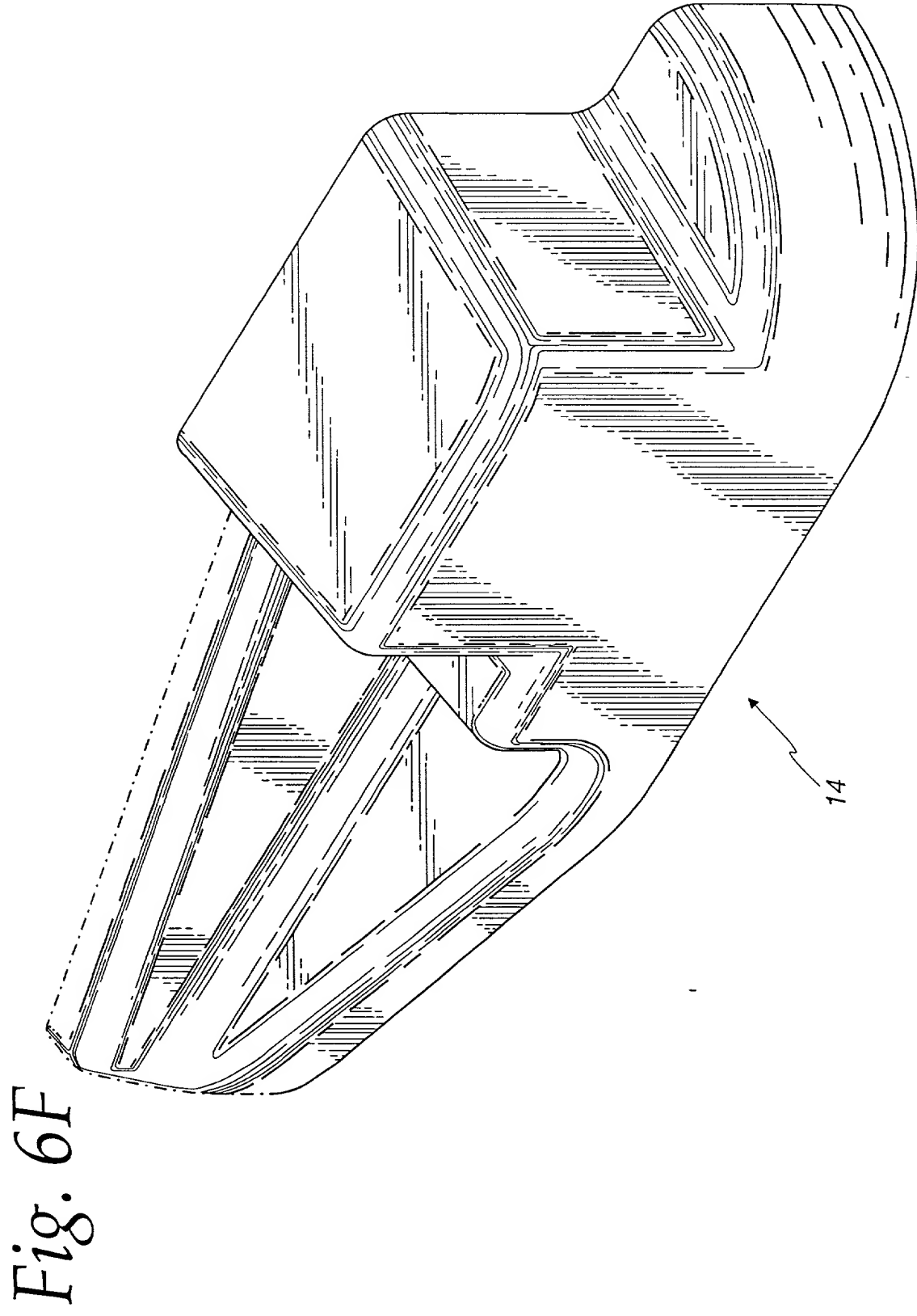


Fig. 6F

FIG. 6F

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Fig. 7A

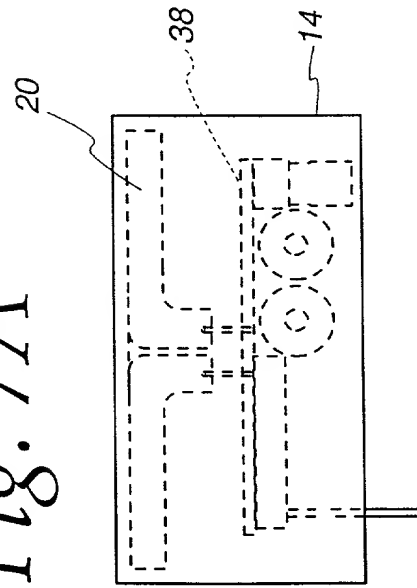
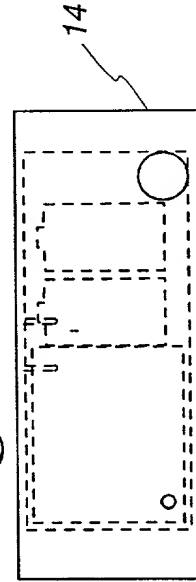
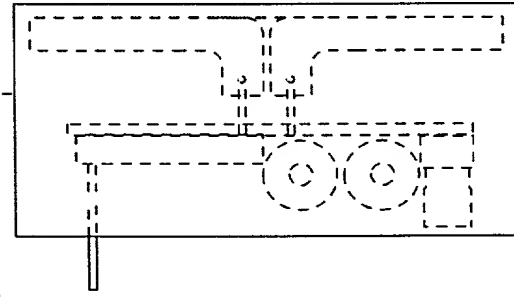


Fig. 7B



14B



14A

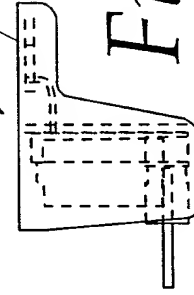
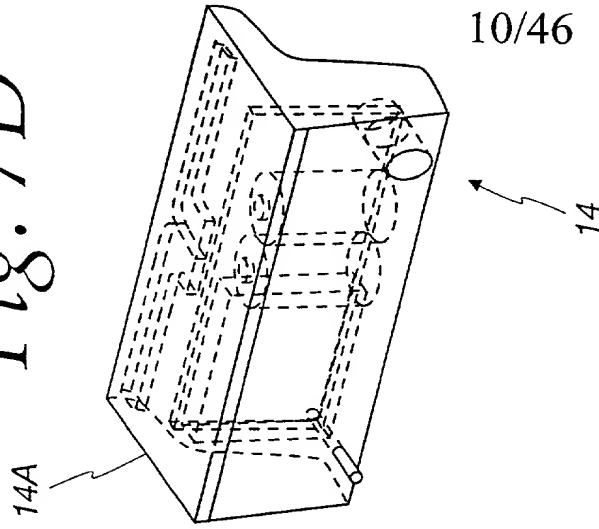


Fig. 7C

Fig. 7D



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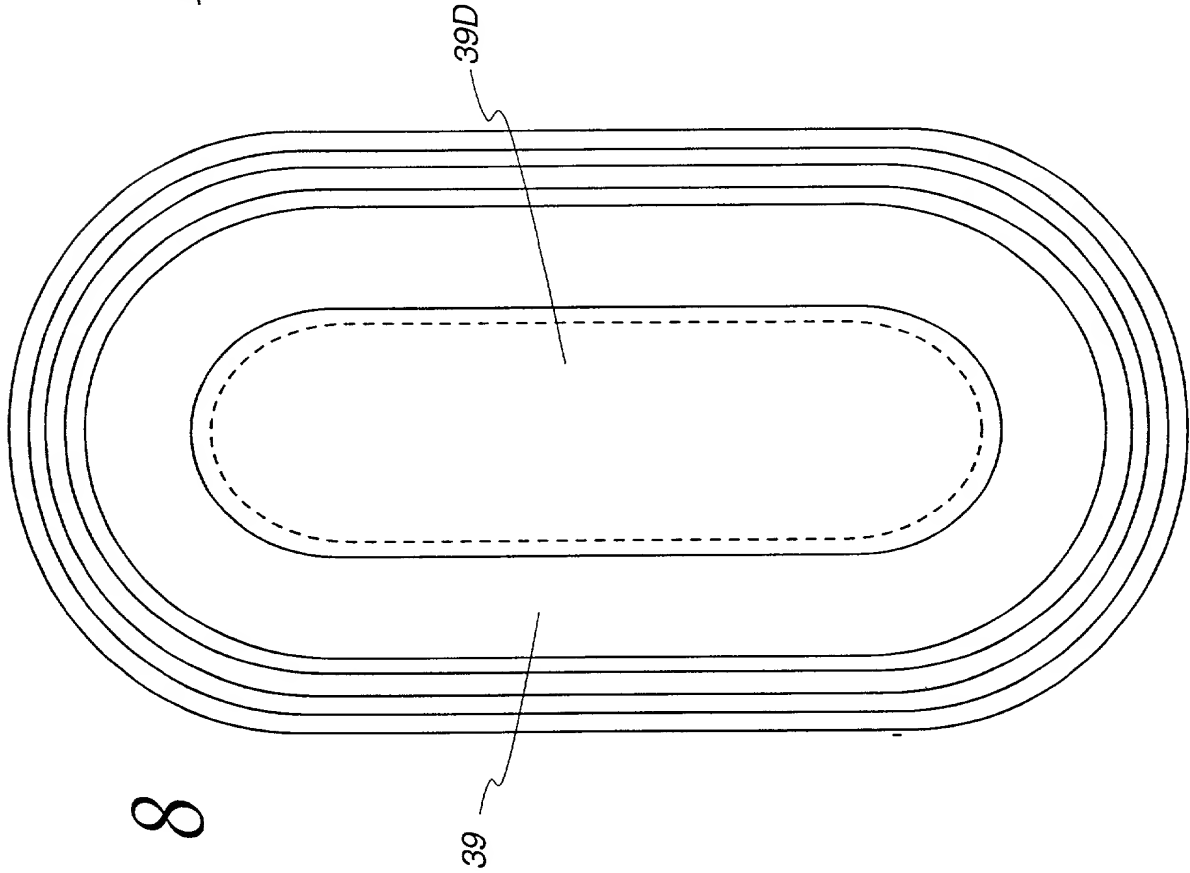
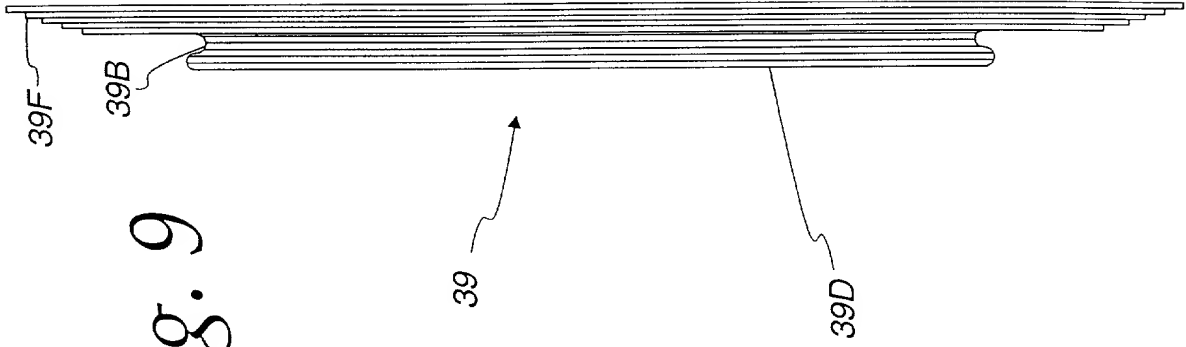


FIG. 8

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Fig. 10C

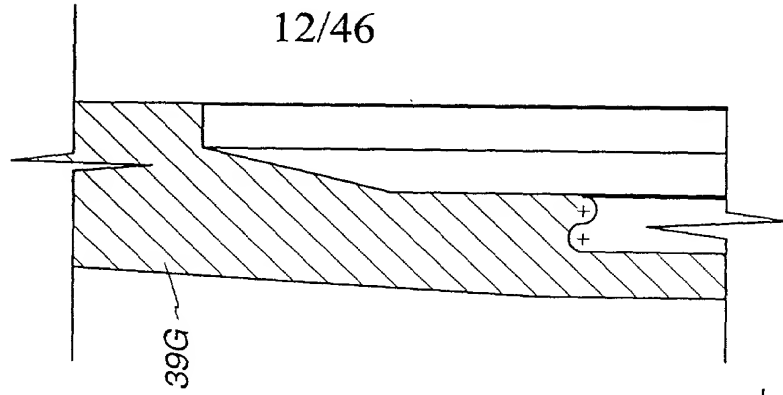


Fig. 10A

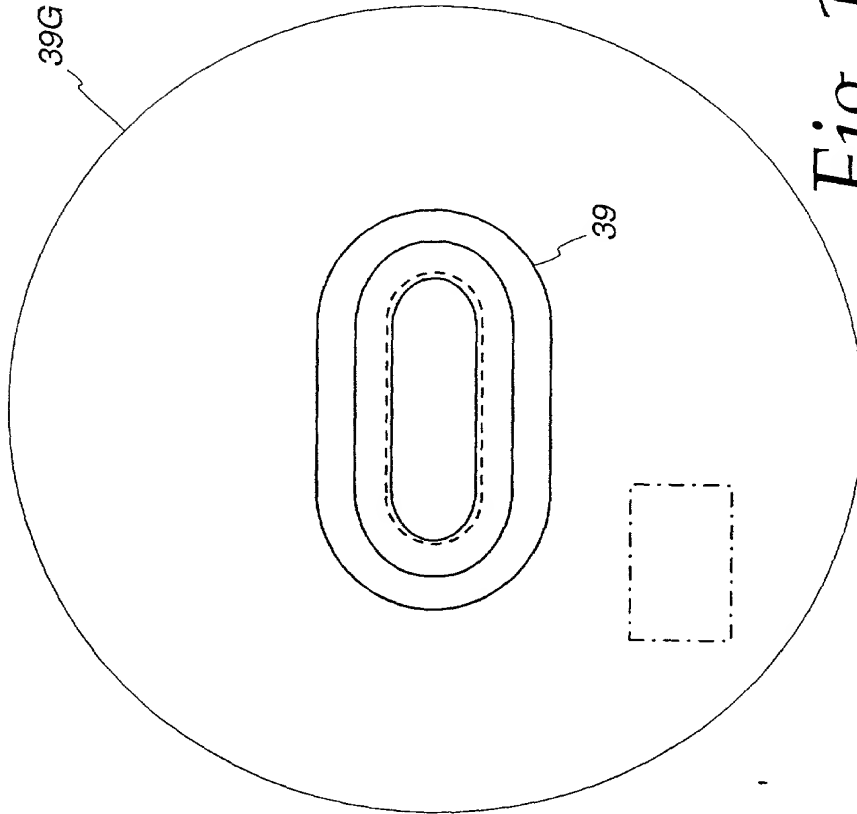
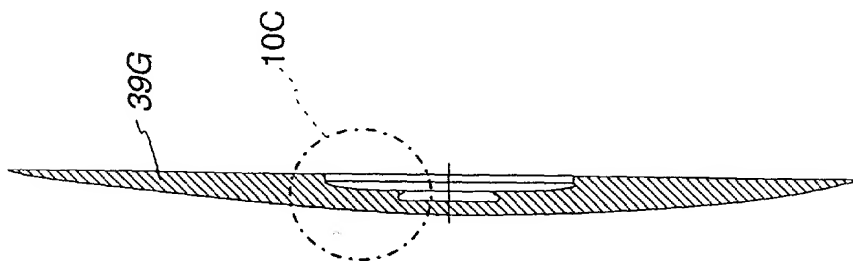


Fig. 10B



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FIG. 10A

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Fig. 11A

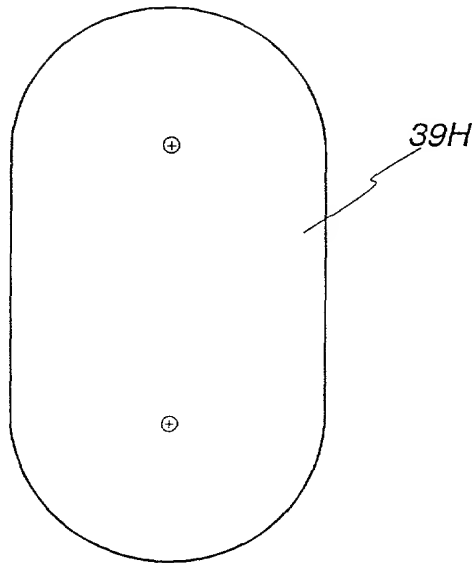
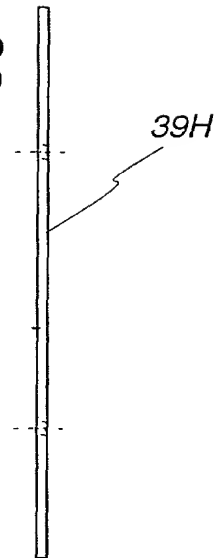
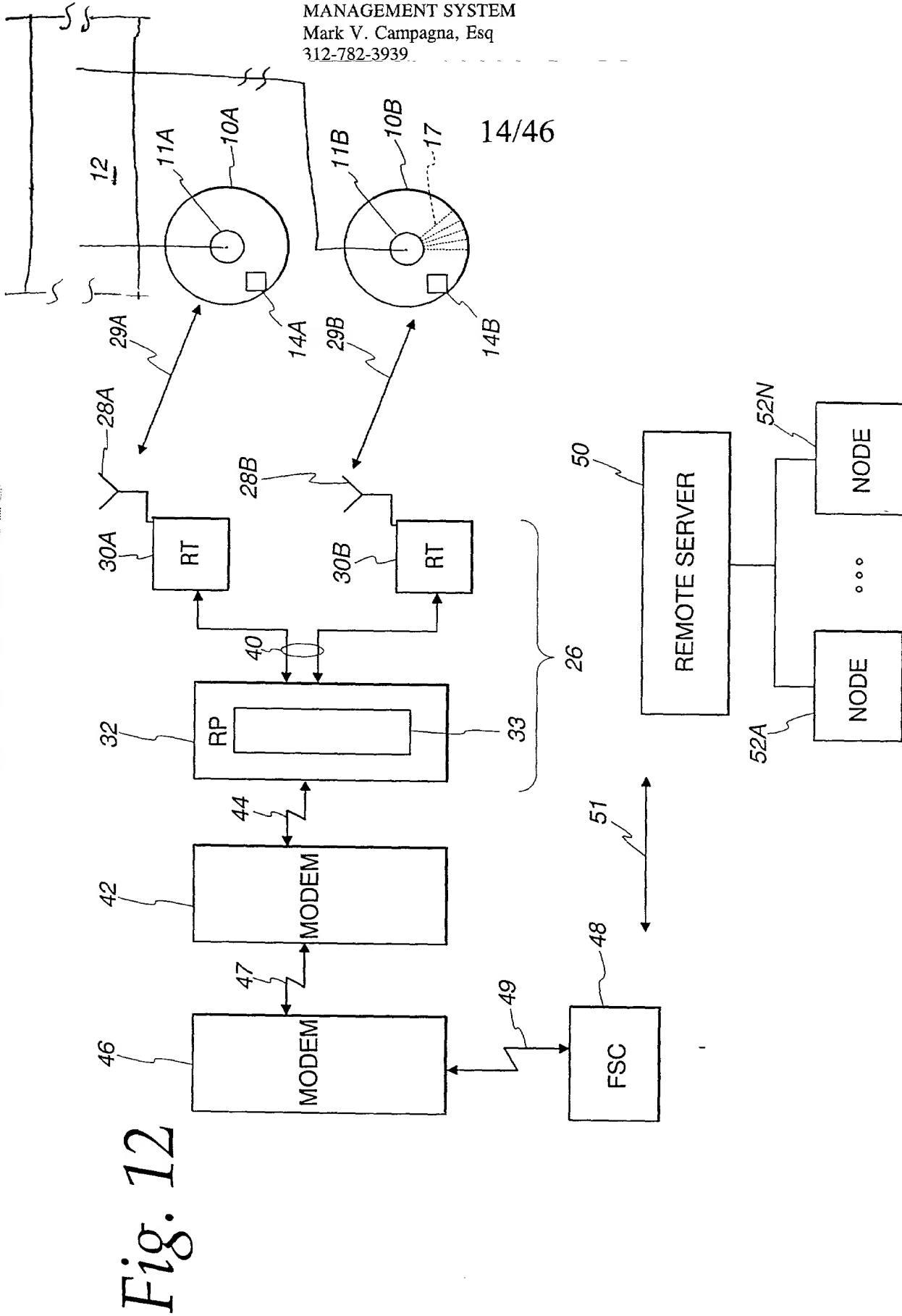


Fig. 11B



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FIG. 12



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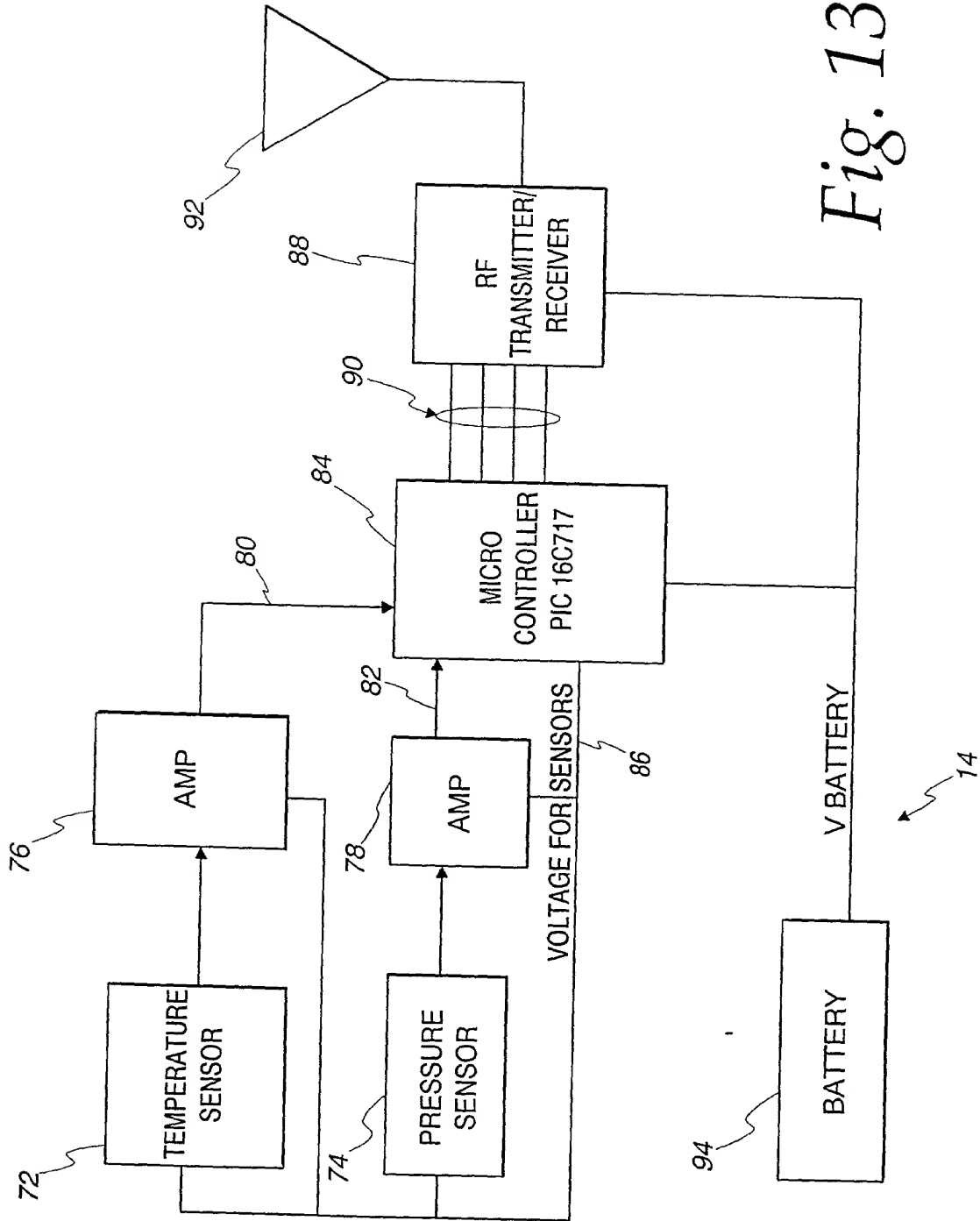
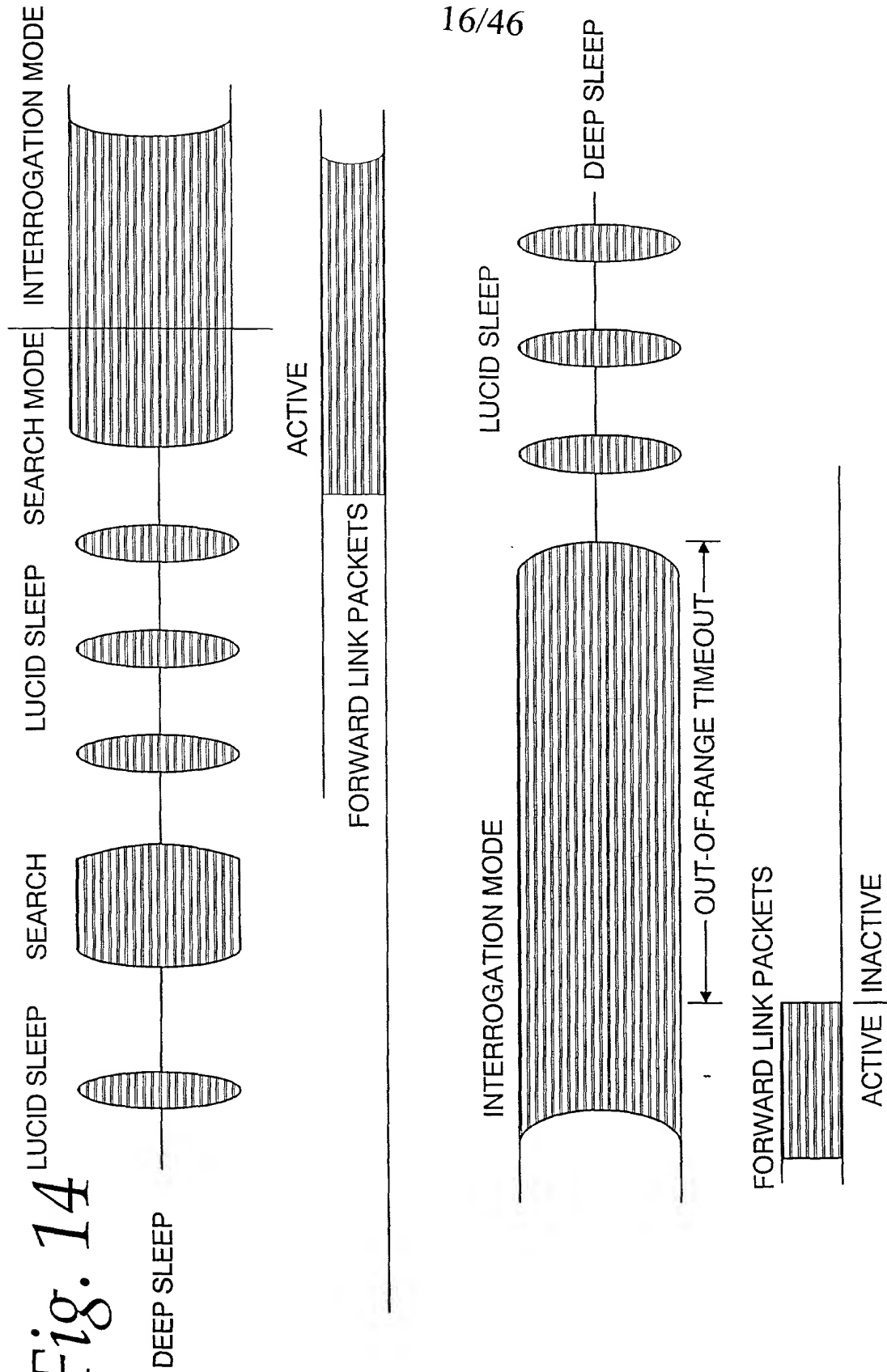
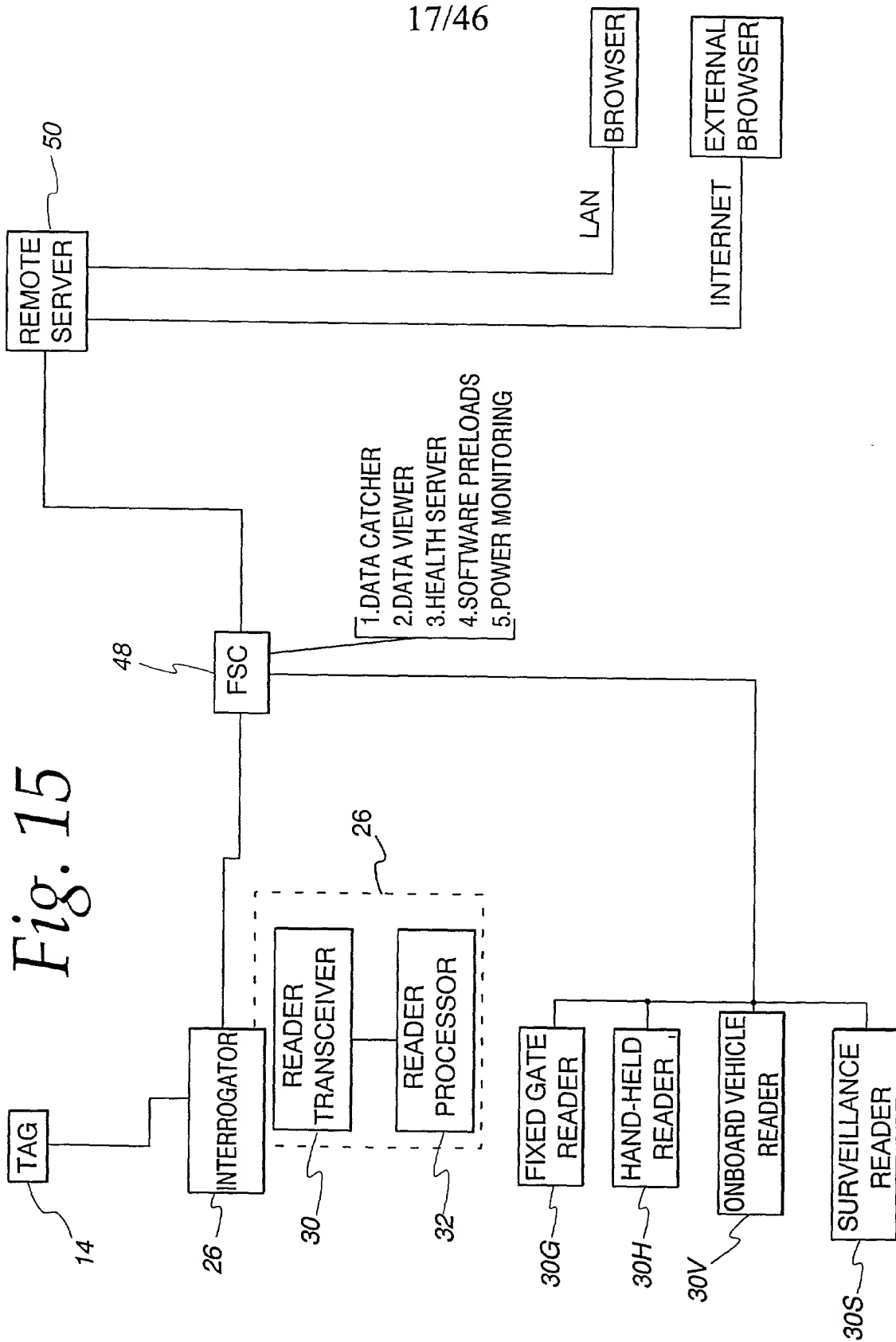


Fig. 13

Fig. 14





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FIG. 15

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Fig. 16

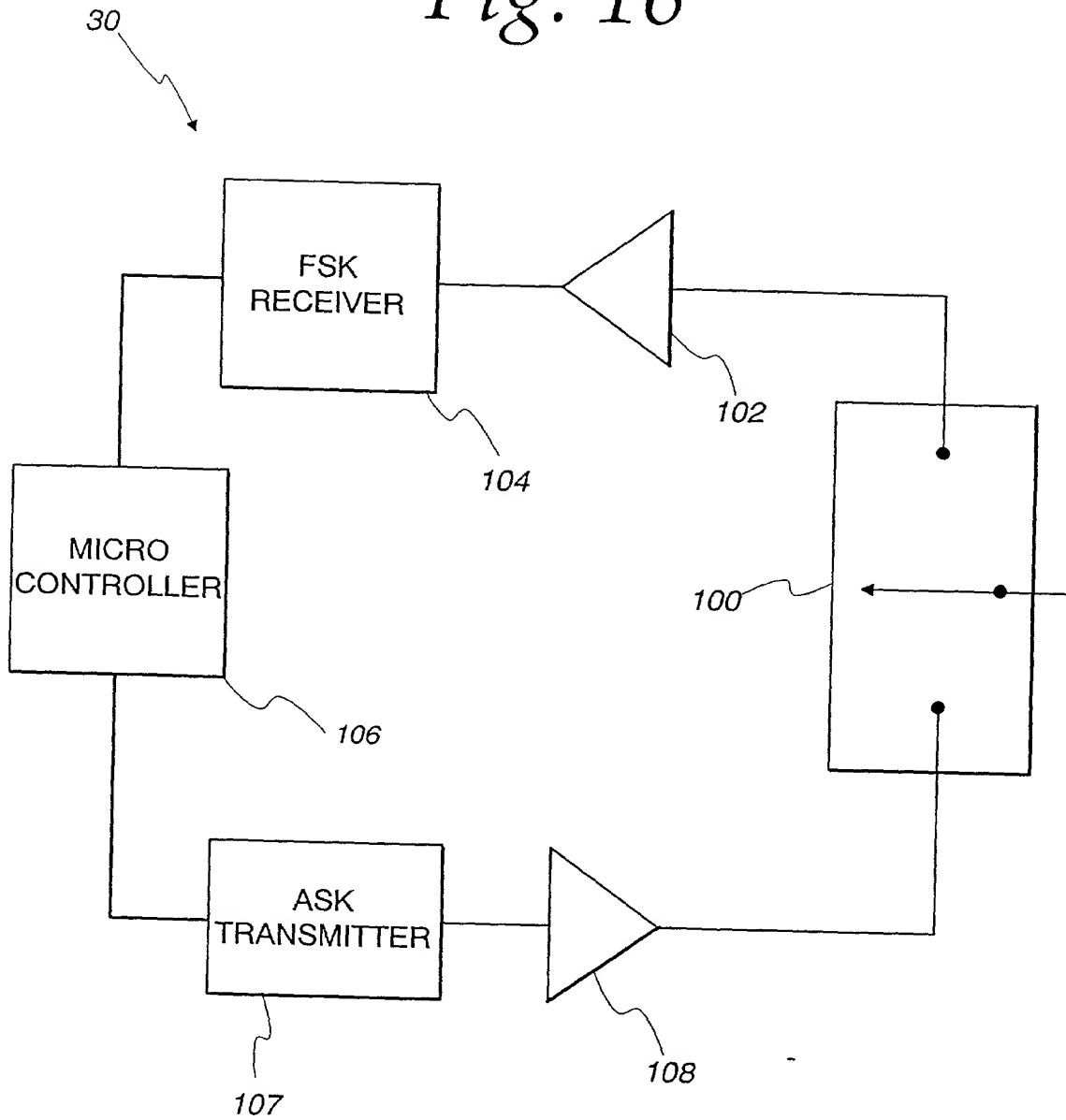
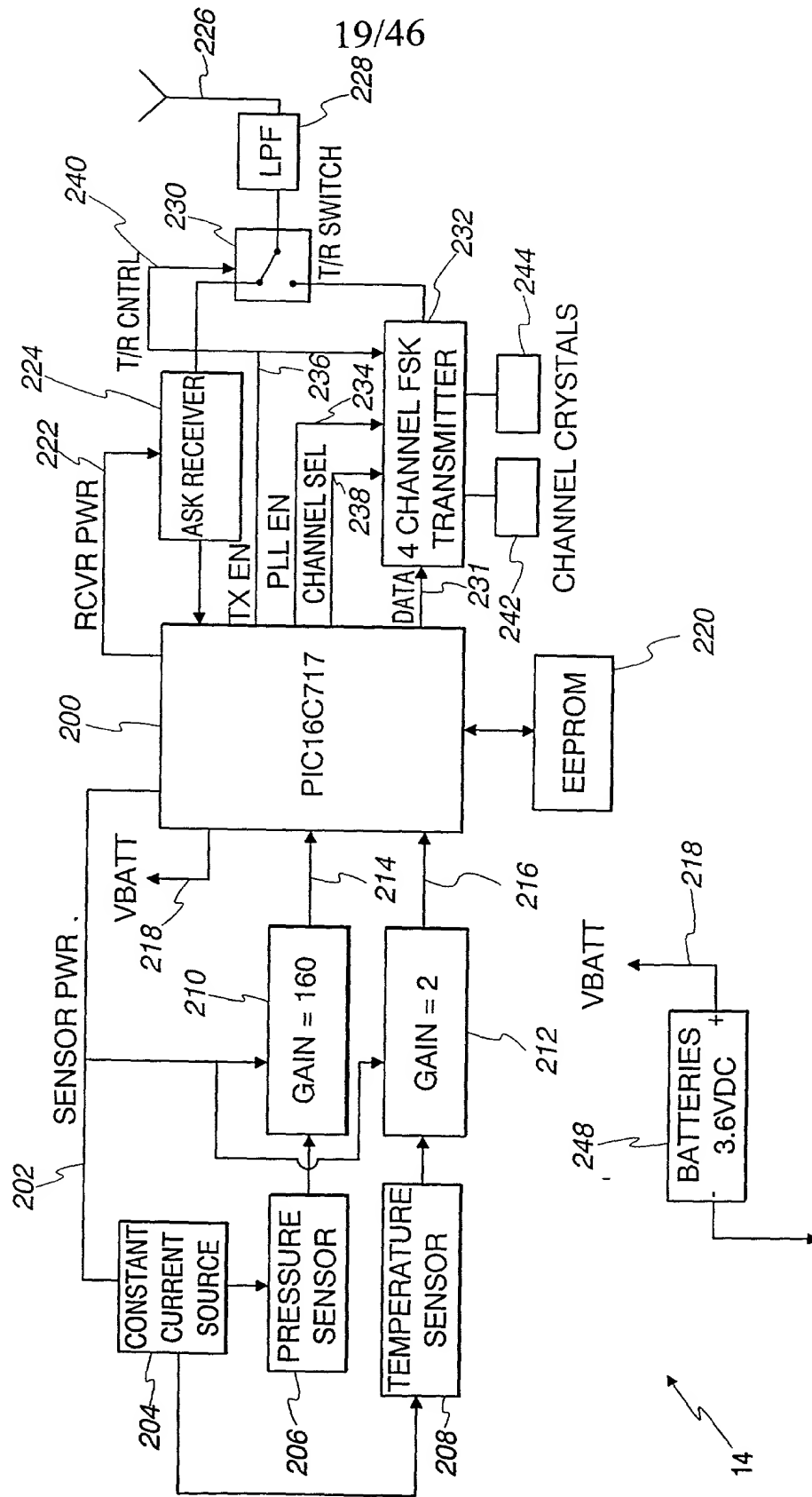


Fig. 17



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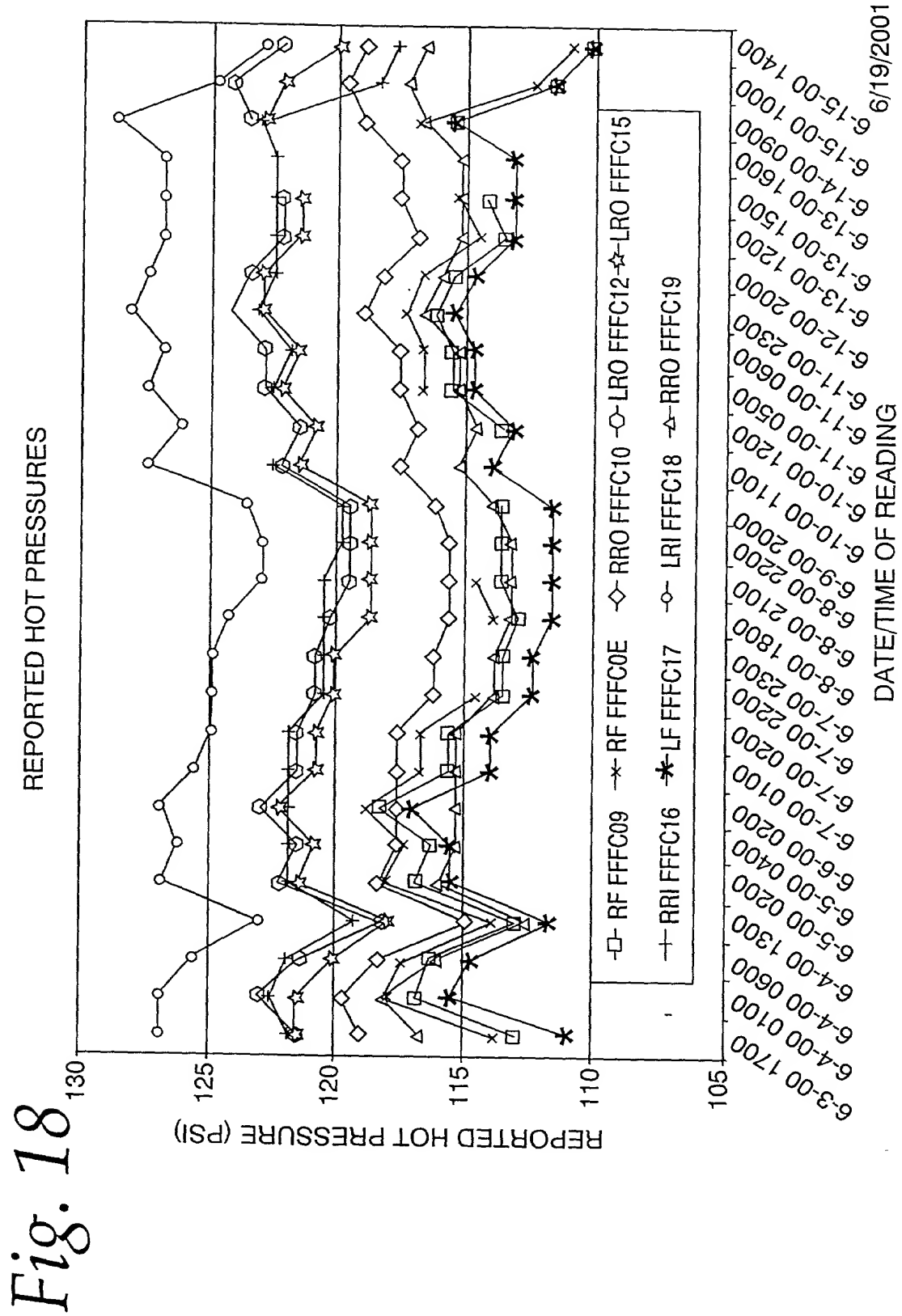
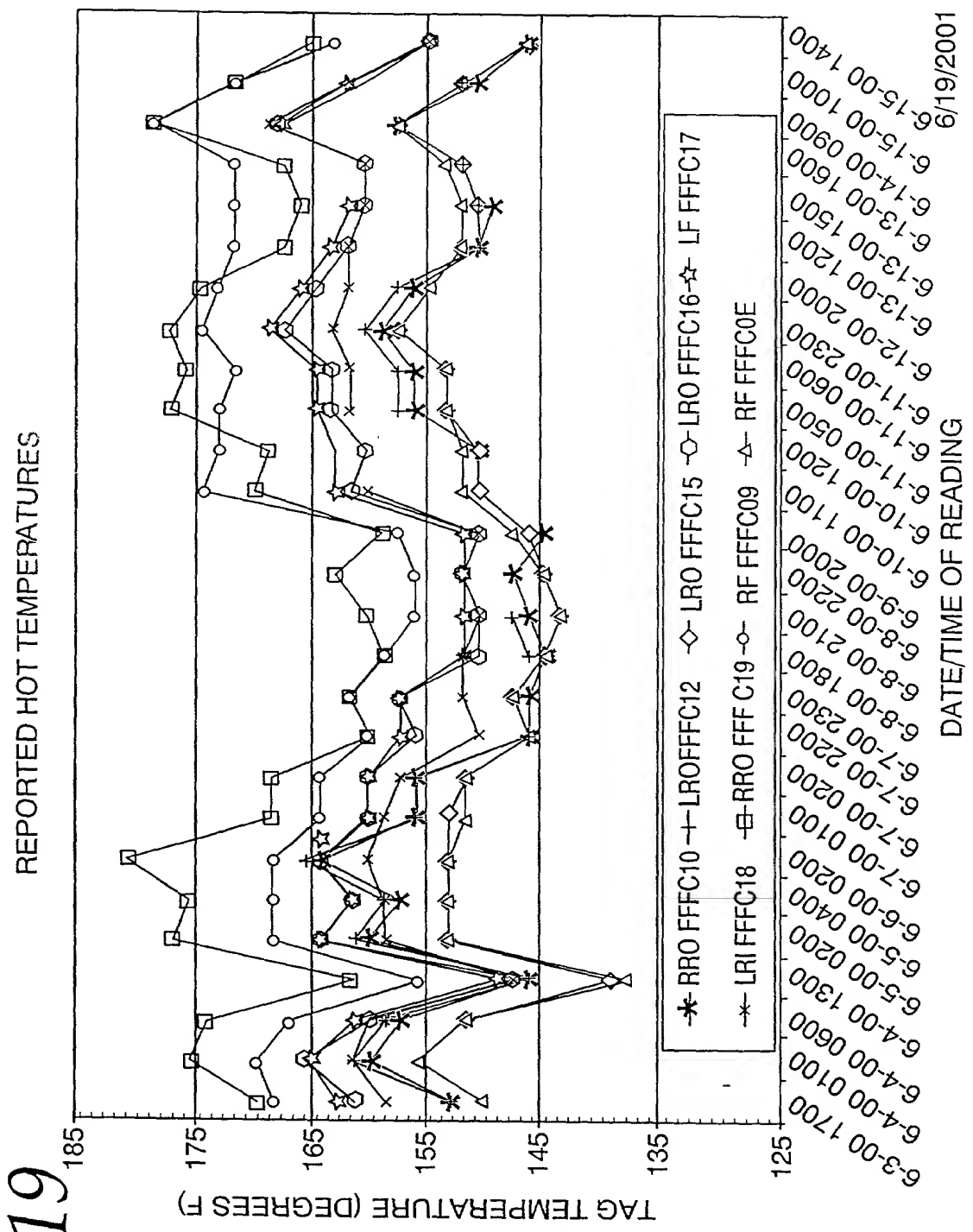


Fig. 19



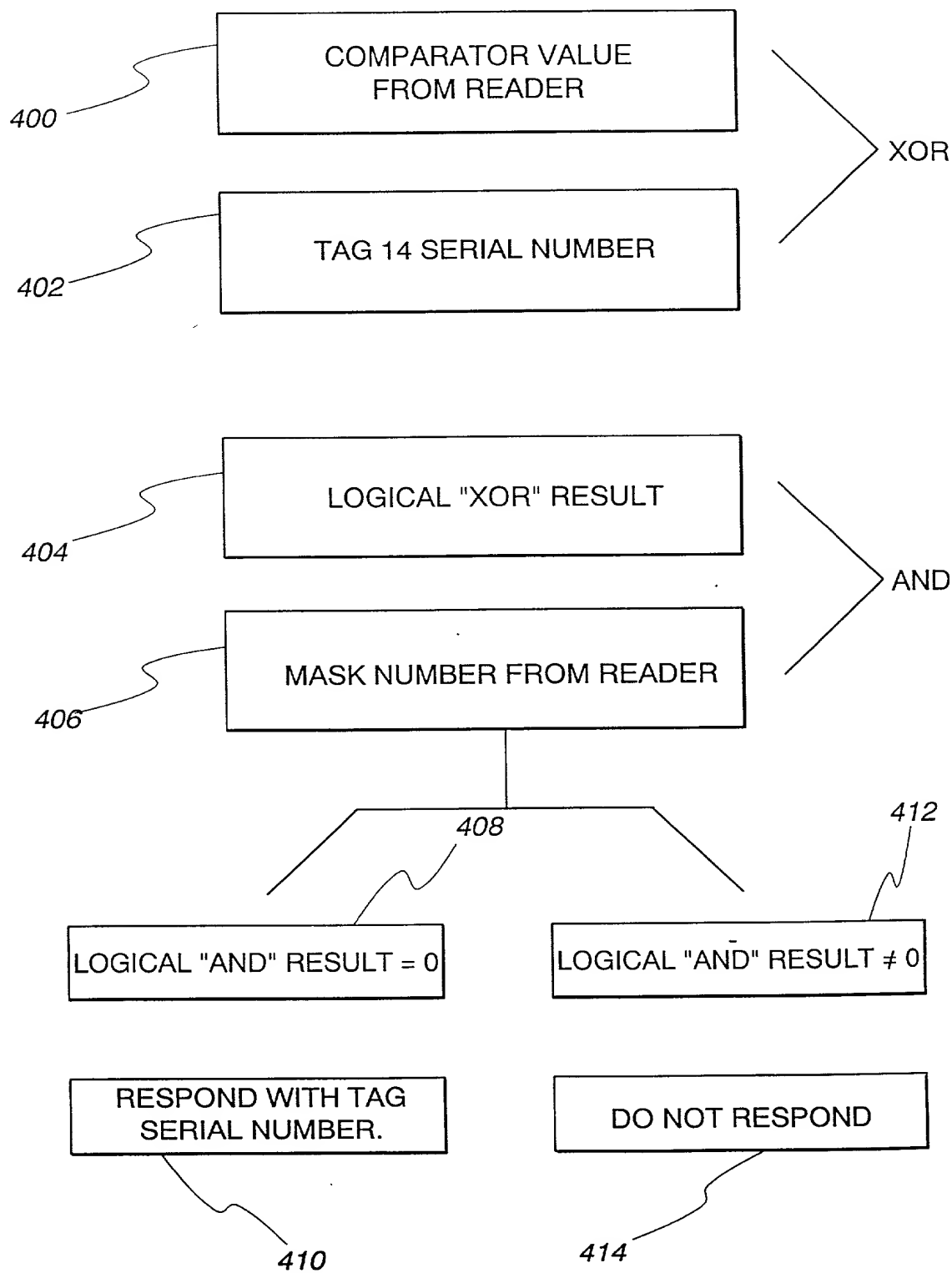
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Fig. 21

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TAG LOGIC FOR
SAR COMMAND PROCESS



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READER LOGIC FOR
SAR TAG ACQUISITION

Fig. 22

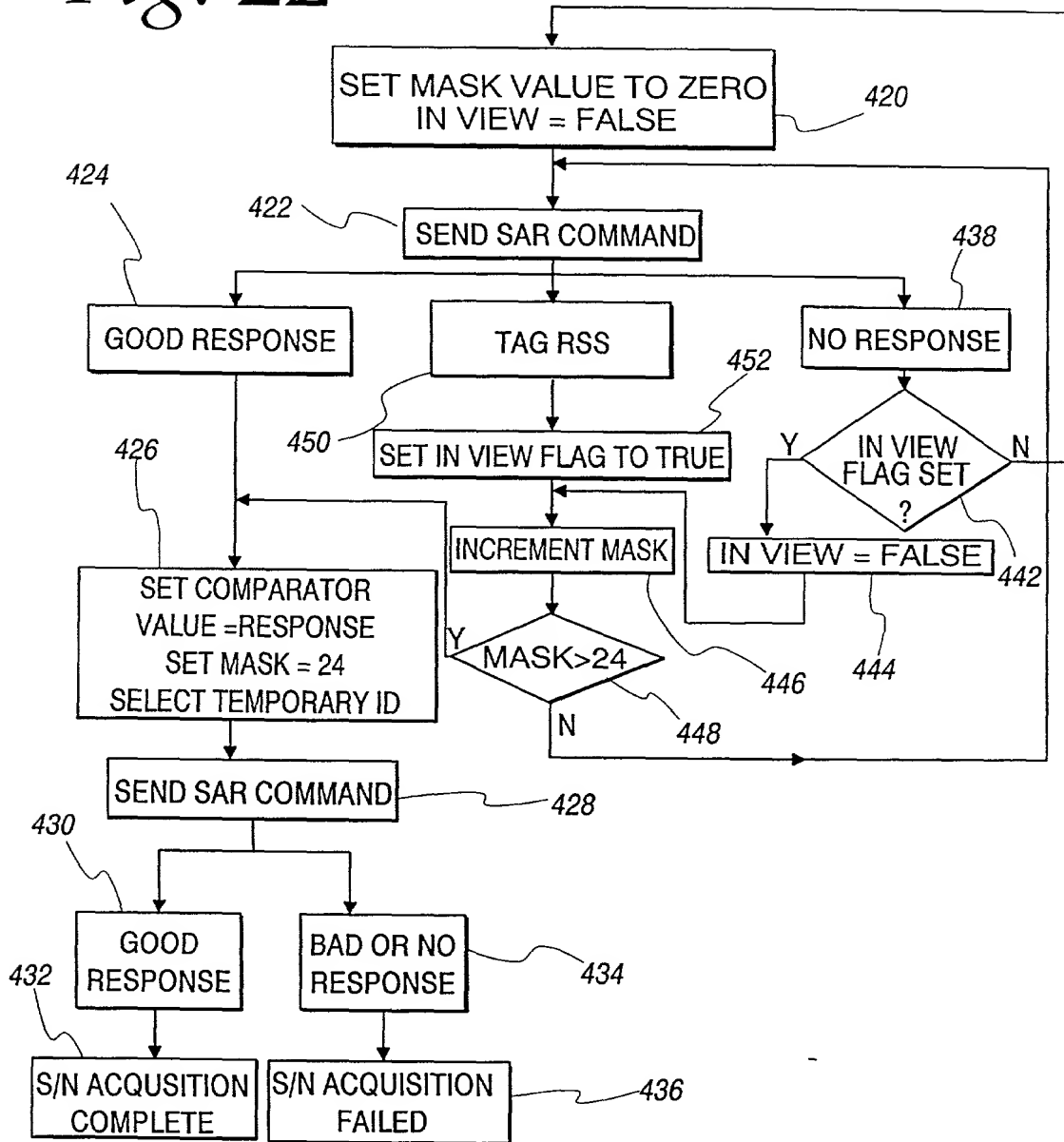


Fig. 23

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BRIDGESTONE
Firestone

CrossLink™
GLOBAL TRACKING & TELEMETRY

2001/02/14 11:07 AM

Display:
Graphical

Filter Criteria:

Fleets

DUMMY
Haul
NEW TAG
UNKNOWN

Log Off Fleet Vehicle Tire Filter About Help

Latest Fleet Information for Fleet: NEW TAG

Truck: Temp Vehicle
Date 11/01/2000
05:45:42 AM

Normal Condition
Alert Condition
Alarm Condition

Fig. 24

BRIDGESTONE
Firestone

CrossLink™
GLOBAL TRACKING & TELEMETRY

2001/02/14 11:07 AM

Display:
Graphical

Vehicles

Temp Vehicles

Log Off Fleet Vehicle Tire Filter About Help

Vehicle Temp Vehicle

Make: Dummy Manufacturer Status: ONLINE Description: Dummy Vehicle for new, unassigned ETMS tire tags

Model: Dummy Model VIN:123456789

61.8 61.0
142.5 139.8
122.9 121.2
2000/10/31 11:20:06 PM 2000/11/01 05:45:42 AM

n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

Measurements displayed as indicated below	Unit
Temperature	°C
Gauge Pressure	PSI
Cold-Fill Pressure	PSI
Time of Measurements	YYYY/MM/DD HH:MM:SS AM/PM

Fig. 25

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Site Name
2001/02/14 11:12 AM

Display:
TABLE

Filter Criteria:

Tires

- fffe00
- fffe01
- fffe04
- fffe05
- fffe06
- fffe07
- fffe09
- fffe0a
- fffe15
- fffe17
- fffe1a
- fffe1b
- TempTire 1

Log Off Fleet Vehicle Tire Filter About Help

Tire TempTire2

Vehicle: Temp Vehicle
 Manufacturer : Dummy Manufacturer Model: Dummy Model
 Tire Position: LF Target Fill: n/a

	Date	Tag SN	Temperature	Cold Fill	Gauge	Obs Type
1	10/31/2000 11:20:06 PM	16776728	61.875	122.948654	142.5333	1
2	10/31/2000 06:48 42 PM	16776728	53.28125	122.367874	137.88486	1
3	10/31/2000 03:35.11 PM	16776728	51.71875	122.4223	137.2208	1
4	10/31/2000 02:48:54 PM	16776728	50.9375	122.14975	136.55673	1
5	10/31/2000 11:06:00 AM	16776728	47.8125	121.651474	134.56454	1
6	10/29/2000 01:20:49 PM	16776728	53.28125	122.367874	137.88486	1
7	10/29/2000 11:44:50 AM	16776728	53.28125	122.367874	137.88486	1
8	10/29/2000 09:45:42 AM	16776728	57.96875	122.79523	140.5411	1
9	10/29/2000 08:56:58 AM	16776728	57.1875	122.528534	139.87704	1
10	10/29/2000 08:54:22 AM	16776728	57.1875	121.93959	139.21298	1
11	10/29/2000 06:54:29 AM	16776728	59.53125	122.74007	141.20517	1
12	10/29/2000 06:52:24 AM	16776728	59.53125	122.15529	140.5411	1
13	10/29/2000 05:29:21 AM	16776728	60.3125	122.420975	141.20517	1

Fig. 26

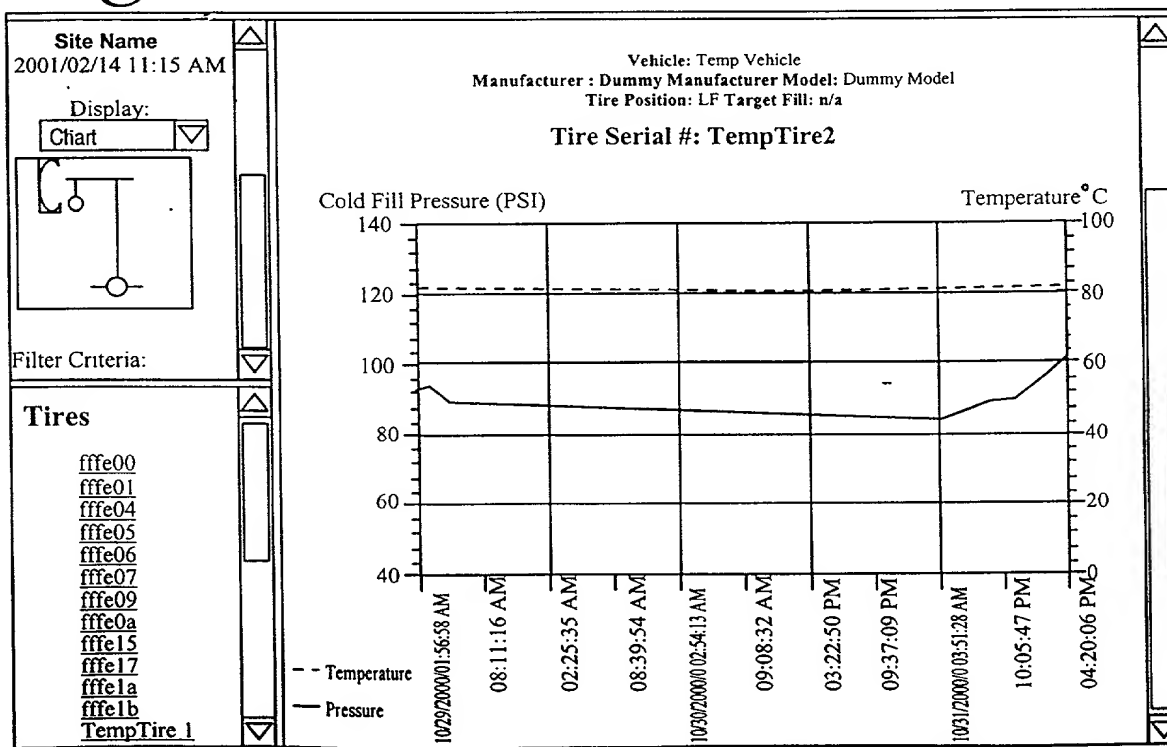


Fig. 27

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About Help

Fleet Vehicle Tire Date

Name: Temp Vehicle
ETMS Dummy Test Vehicle

Manufacturer: UNKNOWN
Dummy Manufacturer

Model: Model UNKNOWN
Dummy Model

Status: ONLINE
OFFLINE

State: All
Alarm

Cancel Apply

Fig. 28

About Help

Fleet Vehicle Tire Date

Name: fffe00-ffe00-16776704
ffe01-ffe01-16776705
(Brand Number-Tire Serial Number-Tag Serial Number)

Manufacturer: Dummy Manufacturer
UNKNOWN

Model: All
Dummy Model Number

Position: All
UNKNOWN

Size: All
DummyX40

Status: All
ONLINE

State: All
Alarm

Cancel Apply

Fig. 29

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BRIDGESTONE
Firestone

Current Site: Boulder

[Create User](#)
[Edit User](#)
[Delete User](#)

[Webmaster](#)

[Boulder](#)

[UNKNOWN](#)
[admin](#)
ID#1
ID#2
ID#3
ID#4
ID#5
ID#6
ID#7
ID#8
ID#9
ID#10
ID#11

Log Off Fleet Vehicle Tire Tags Site Change Site Help

User Overview

User ID: Boulder
First Name: Bob Last Name: Boulder
Telephone: X
Pager: E-Mail
Site: Boulder
Location:
Last Login:
Number of Failed Login Attempts: 0
Maximum number of Login failures permitted: 5
Account disabled: False

Fig. 30

BRIDGESTONE
Firestone

Current Site: Boulder

[Create User](#)
[Edit User](#)
[Delete User](#)

[Webmaster](#)

[Boulder](#)

[UNKNOWN](#)
[admin](#)
ID#1
ID#2
ID#3
ID#4
ID#5
ID#6
ID#7
ID#8
ID#9
ID#10
ID#11

Log Off Fleet Vehicle Tire Tags Site Change Site Help

User Overview

User ID: Boulder
First Name: Bob
Telephone: X
Pager: E-Mail
Site: Boulder
Location:
Last Login:
Number of Failed Login Attempts: 0
Maximum number of Login failures permitted: 5
Account disabled: False

COMPOSITION

File Edit View Insert Format Tools Communicator Help

Send Quote Address Attach Options Spelling Save Print Security Stop

TO: ETMSWebmaster@CrosslinkInc.com

SUBJECT:

PRIORITY: NORMAL

NORMAL VARIABLE WIDTH 18 A A

This is how a user can contact the webmaster about questions or problems right from their user screen.

Print this page

Fig. 31

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The 'Edit Vehicle' window features a left sidebar with a 'BRIDGESTONE Firestone' logo, 'Current Site: Boulder', and 'Actions' (Save, Cancel). The main area is titled 'Edit Vehicle' and contains a 'Vehicle:' text box, an 'Mfg Name and Model' dropdown menu (currently showing 'UNKNOWN MODEL UNKNOWN'), and two columns: 'Available Tires' (empty) and 'Tires Assigned to Vehicle' (containing a list of tire IDs: -S9N001045, -S9N000442, -S9N000443, -S9N000444, -S8L001345 with up/down arrows). Below these is a 'General Info:' section with fields for 'VIN:', 'Description:' (showing '-1'), 'Service Start DTS: -1', 'Curr Obs DTS: -1', and 'Inception DTS: -1'.

Fig. 32

The 'Edit Tire' window has a top menu bar with 'Log Off', 'Users', 'Fleet', 'Vehicles', 'Tires', 'Tags', 'Site', and 'Help'. The left sidebar is identical to Fig. 31. The main area is titled 'Edit Tire' and includes fields for 'Tire Serial Number:' (S9N001045), 'Tire Brand:', 'Tire Target Fill Pressure:', 'Tire Position:0' (with a dropdown showing 'RF'), 'Hours On Vehicle:', and 'Hours Total:'. At the bottom, it has 'Tire Mfg Name and Model', 'Available Tags' (empty), and 'Tags Assigned to Tire' (containing '16775702' with up/down arrows). A 'General Info:' section is partially visible at the bottom.

+

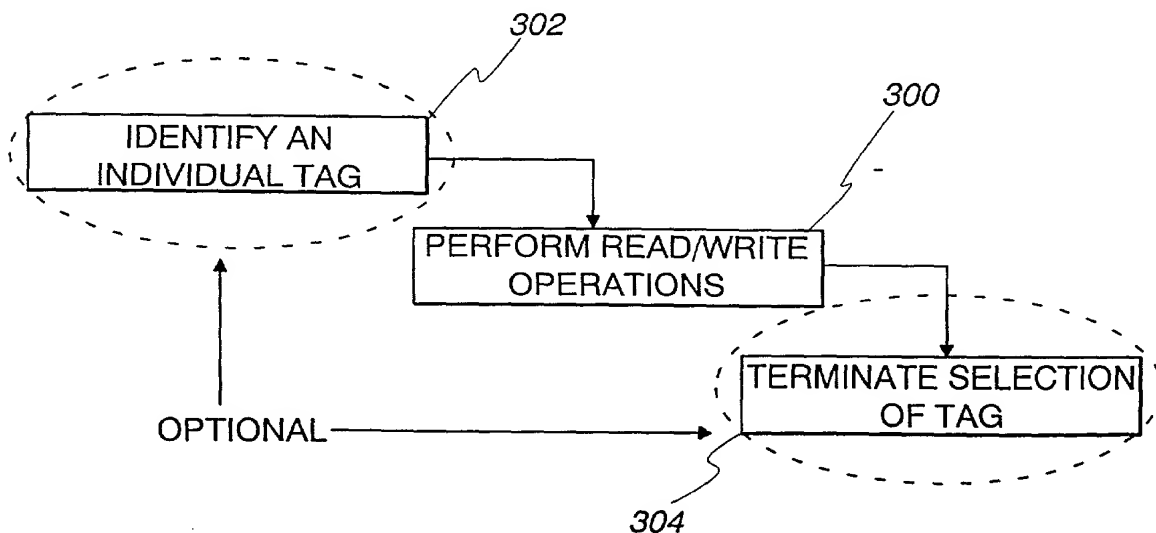
Fig. 33

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The screenshot shows a web application interface. On the left is a sidebar with a logo for 'BRIDGESTONE' and 'Firestone', the text 'Current Site: Boulder', and an 'Actions' section with 'Save' and 'Cancel' buttons. The main content area has a navigation bar with links: 'Log Off', 'Users', 'Fleet', 'Vehicles', 'Tires', 'Tags', 'Site', and 'Help'. Below the navigation bar is the title 'Create a New Tag'. Under this title are five input fields, each preceded by a label: 'Tag Serial Number:', 'Tag Temperature Bias:', 'Tag Temperature Scale:', 'Tag Pressure Bias:', and 'Tag Pressure Scale:'.

Fig. 34

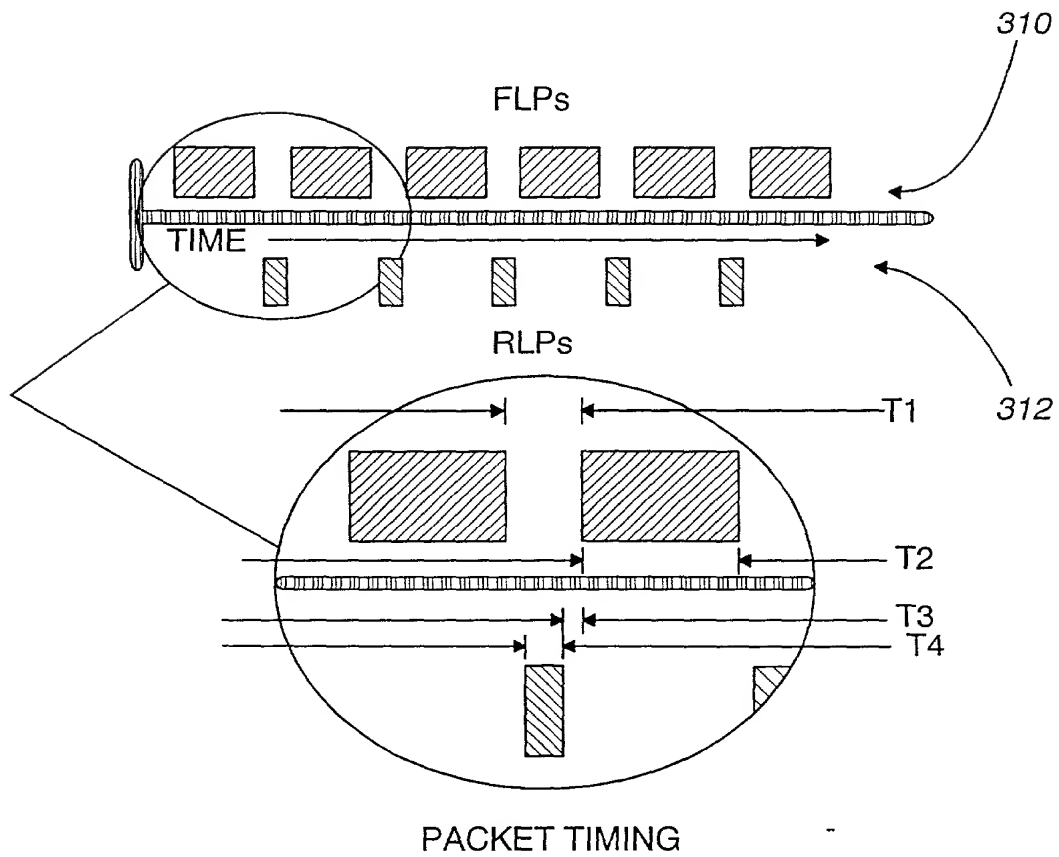
PROTOCOL OVERVIEW



+

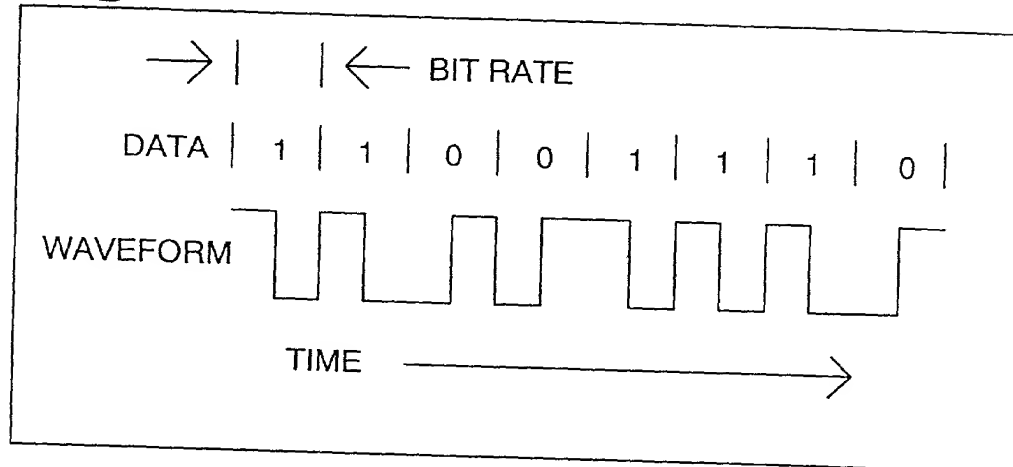
31/46

Fig. 35



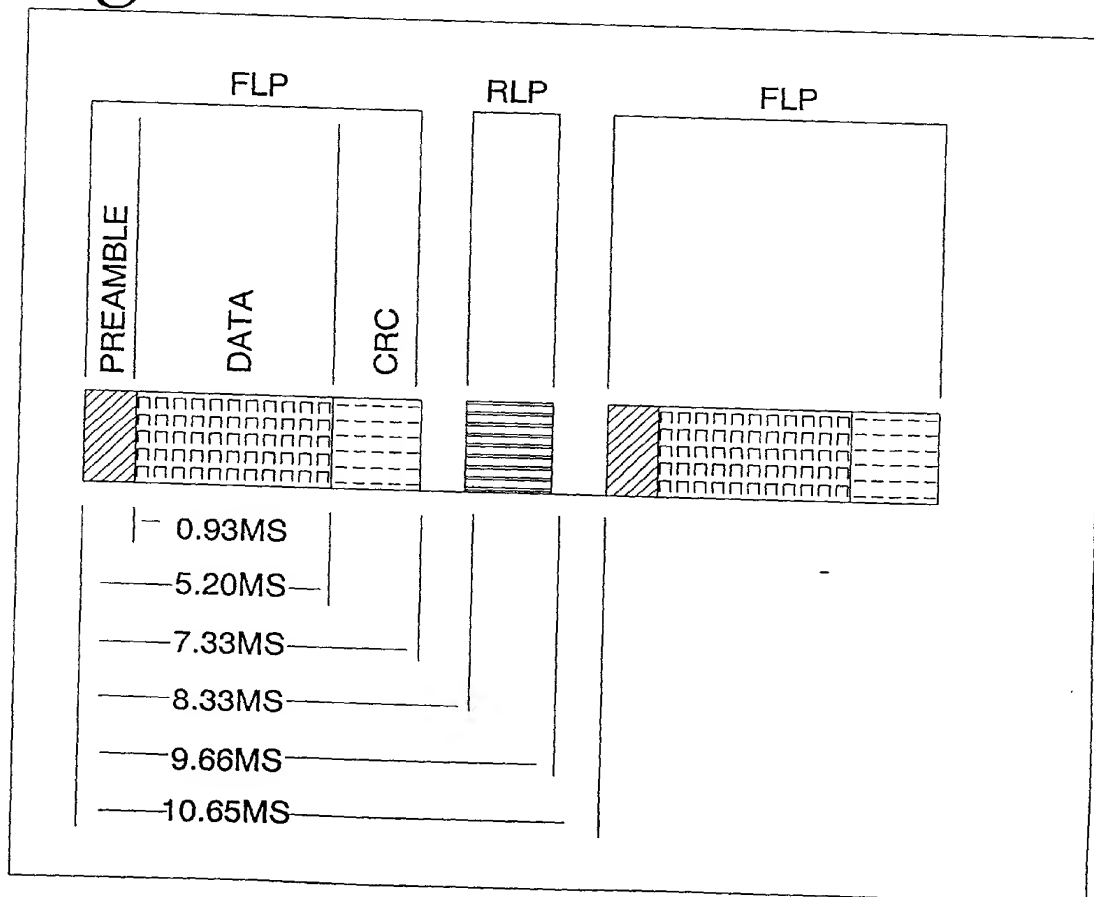
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Fig. 36



MANCHESTER ENCODING

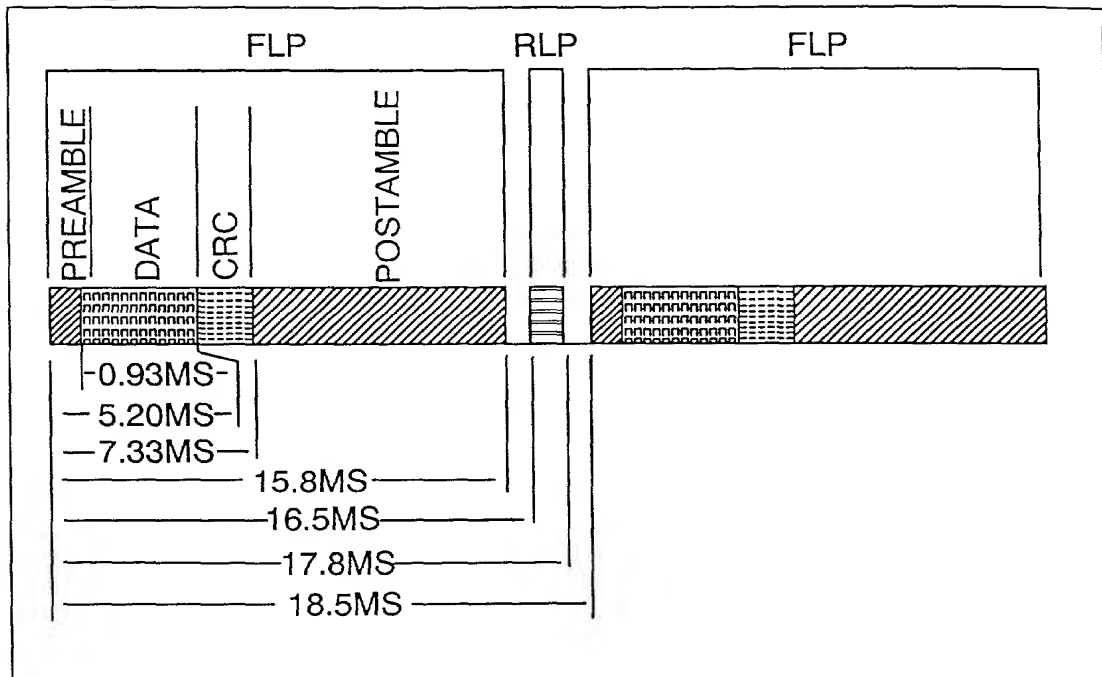
Fig. 37B



TIMING DIAGRAM WITH PREAMBLE & CRC

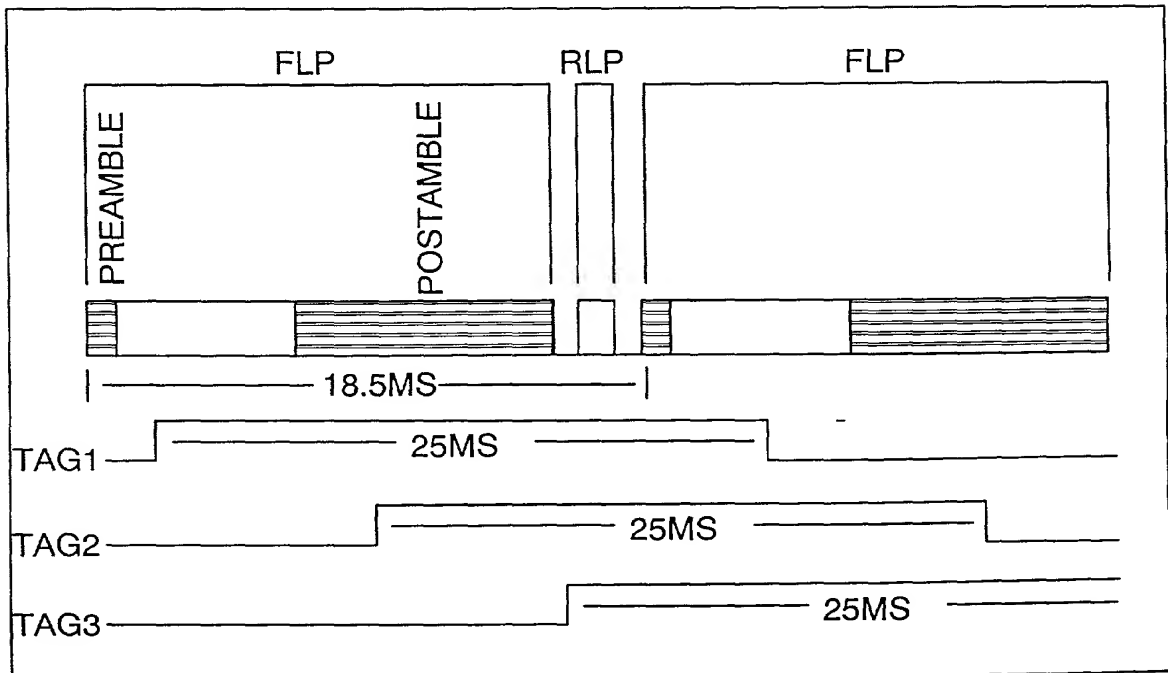
Fig. 37A

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TIMING DIAGRAM WITH PREAMBLE, CRC, POSTAMBLE

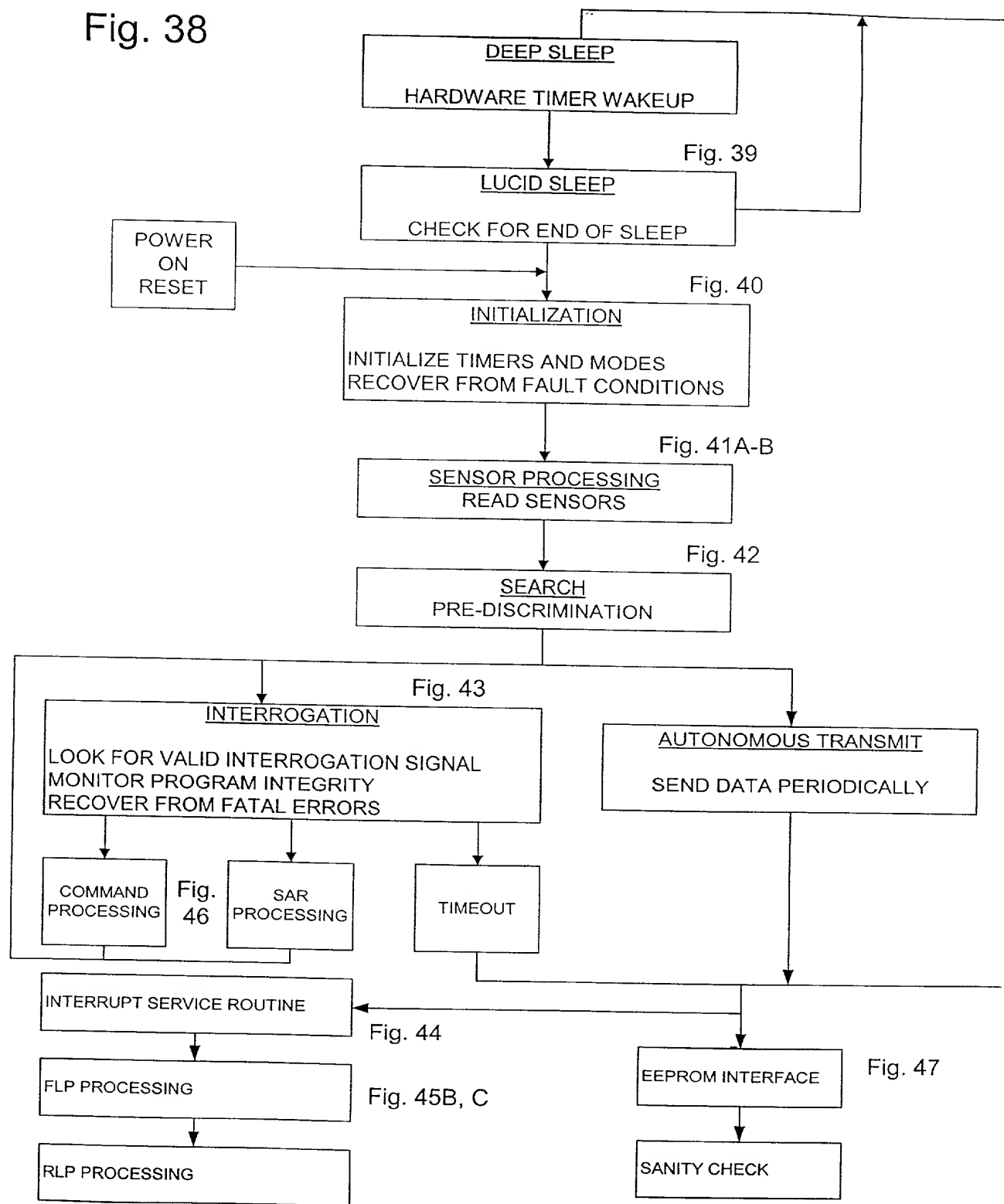
Fig. 37C



TAG RECEIVER WAKEUP

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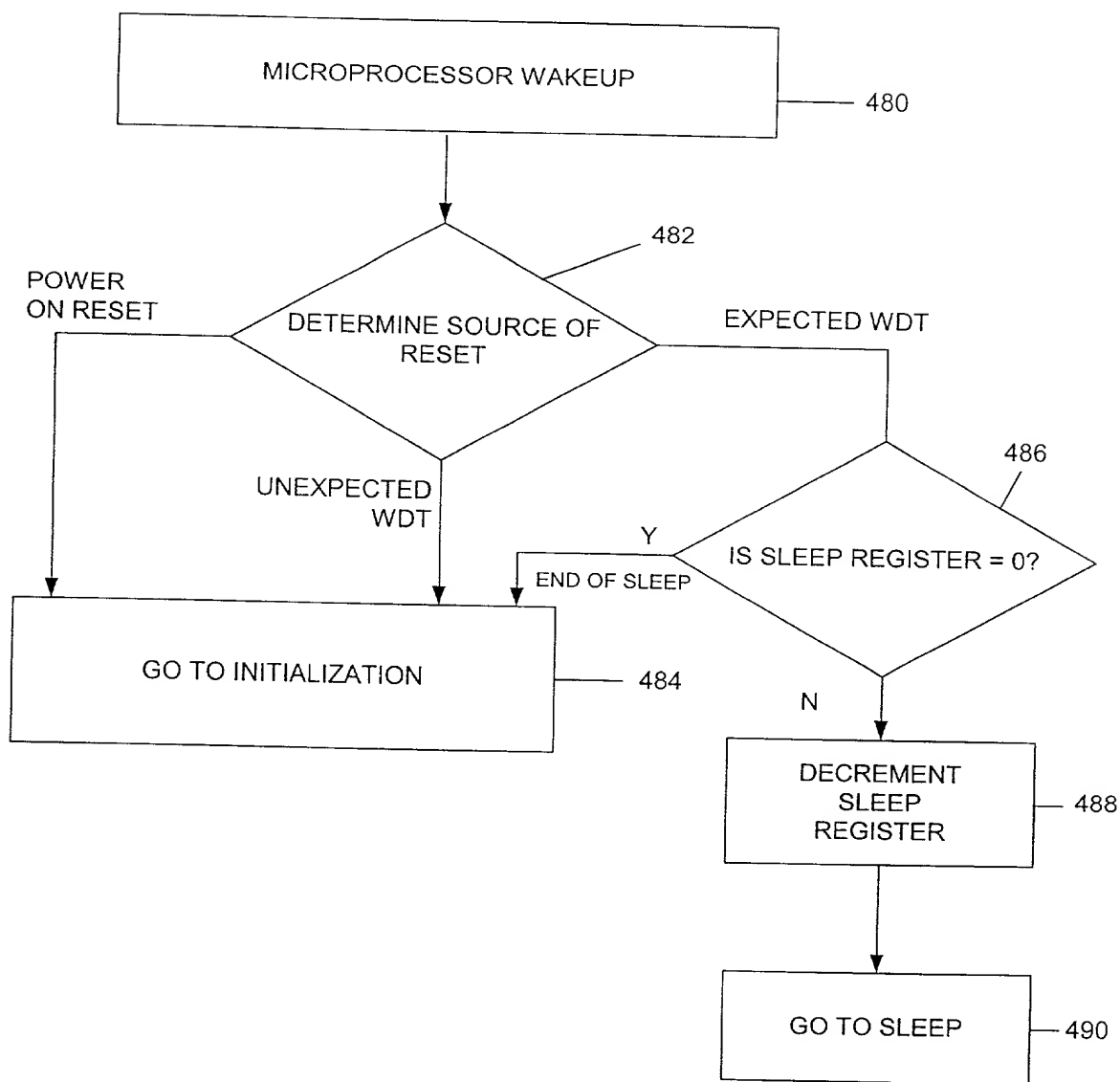
Fig. 38



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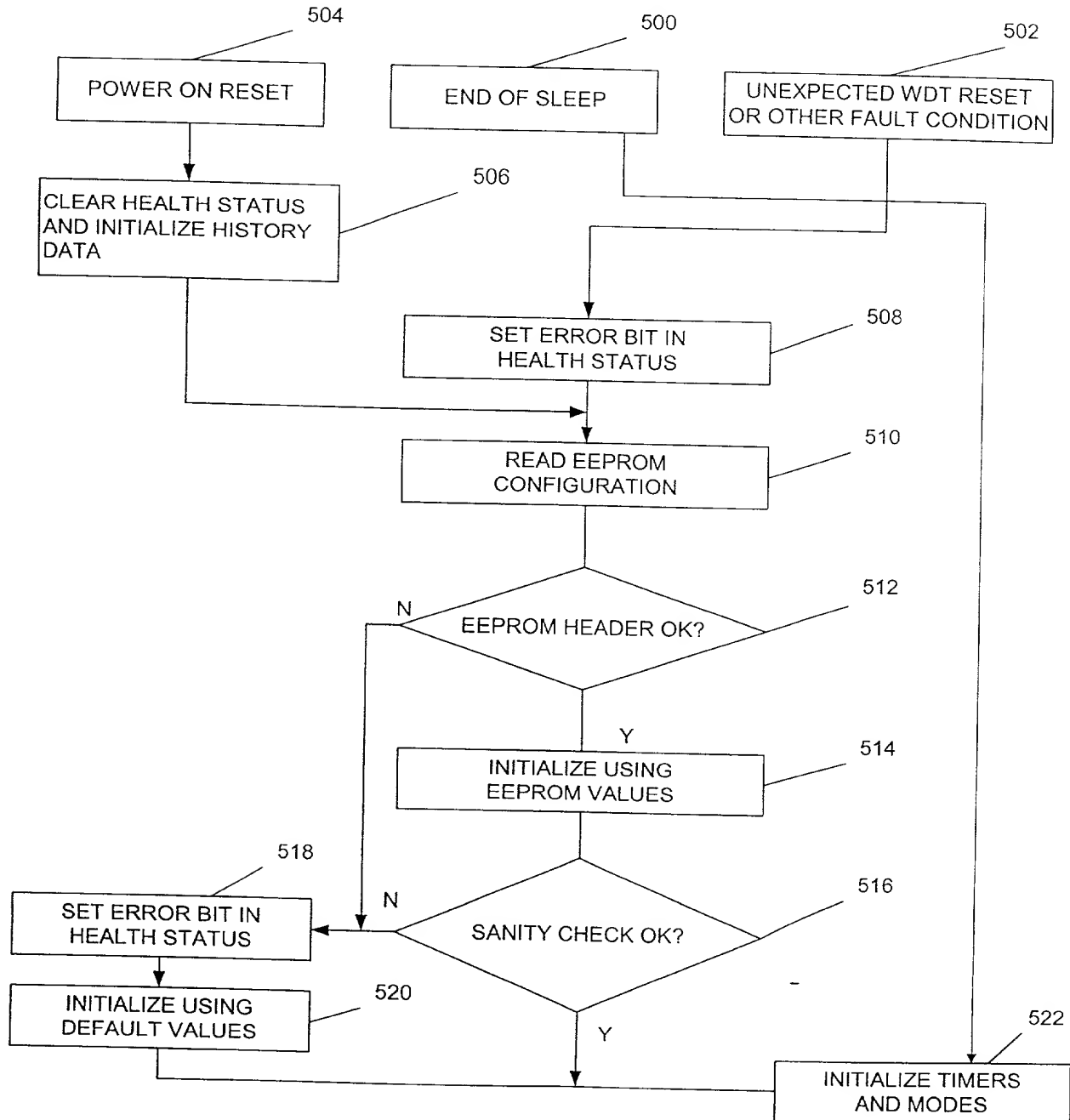
Fig. 39

LUCID SLEEP



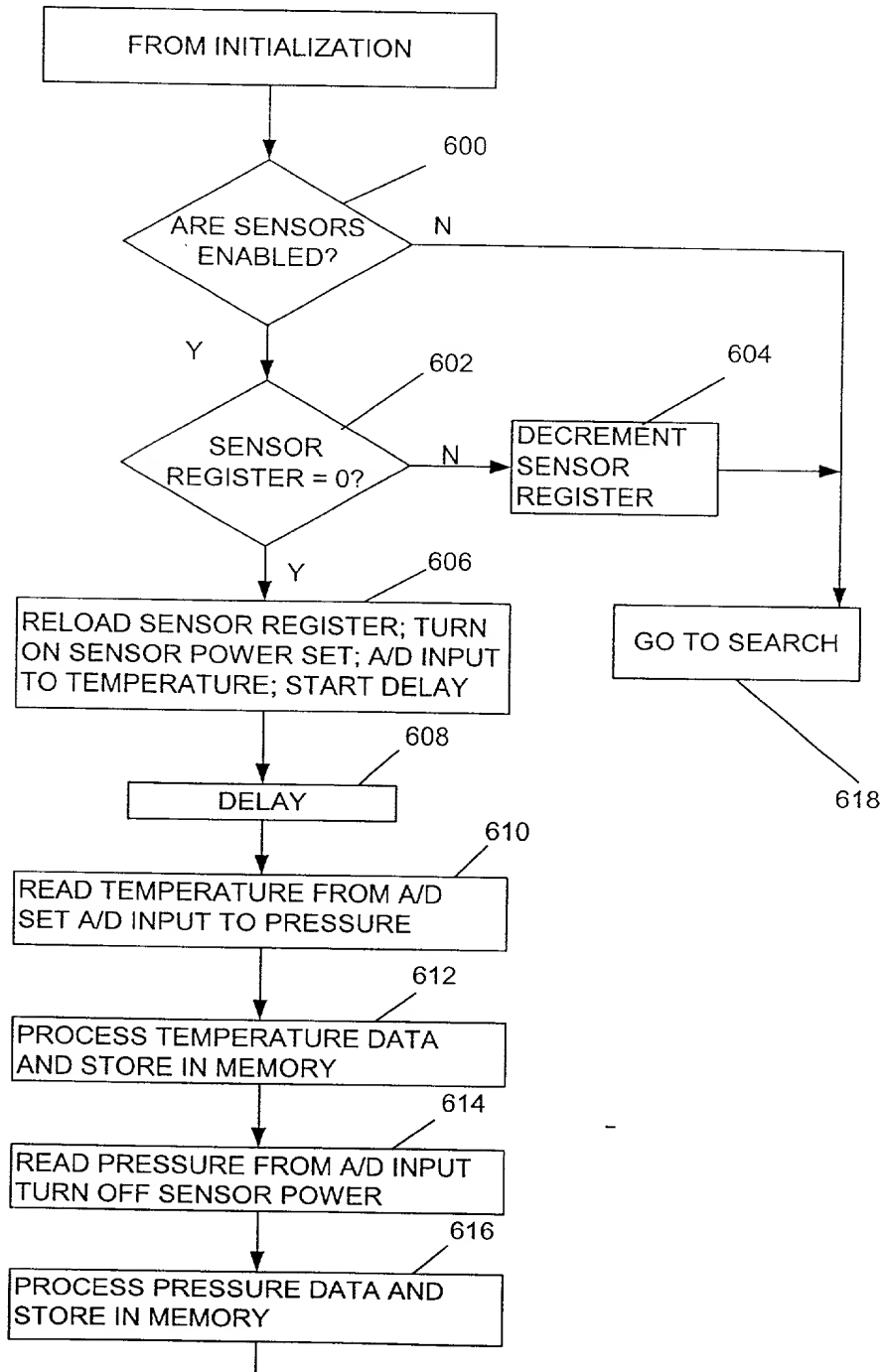
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Fig. 40

INITIALIZATION



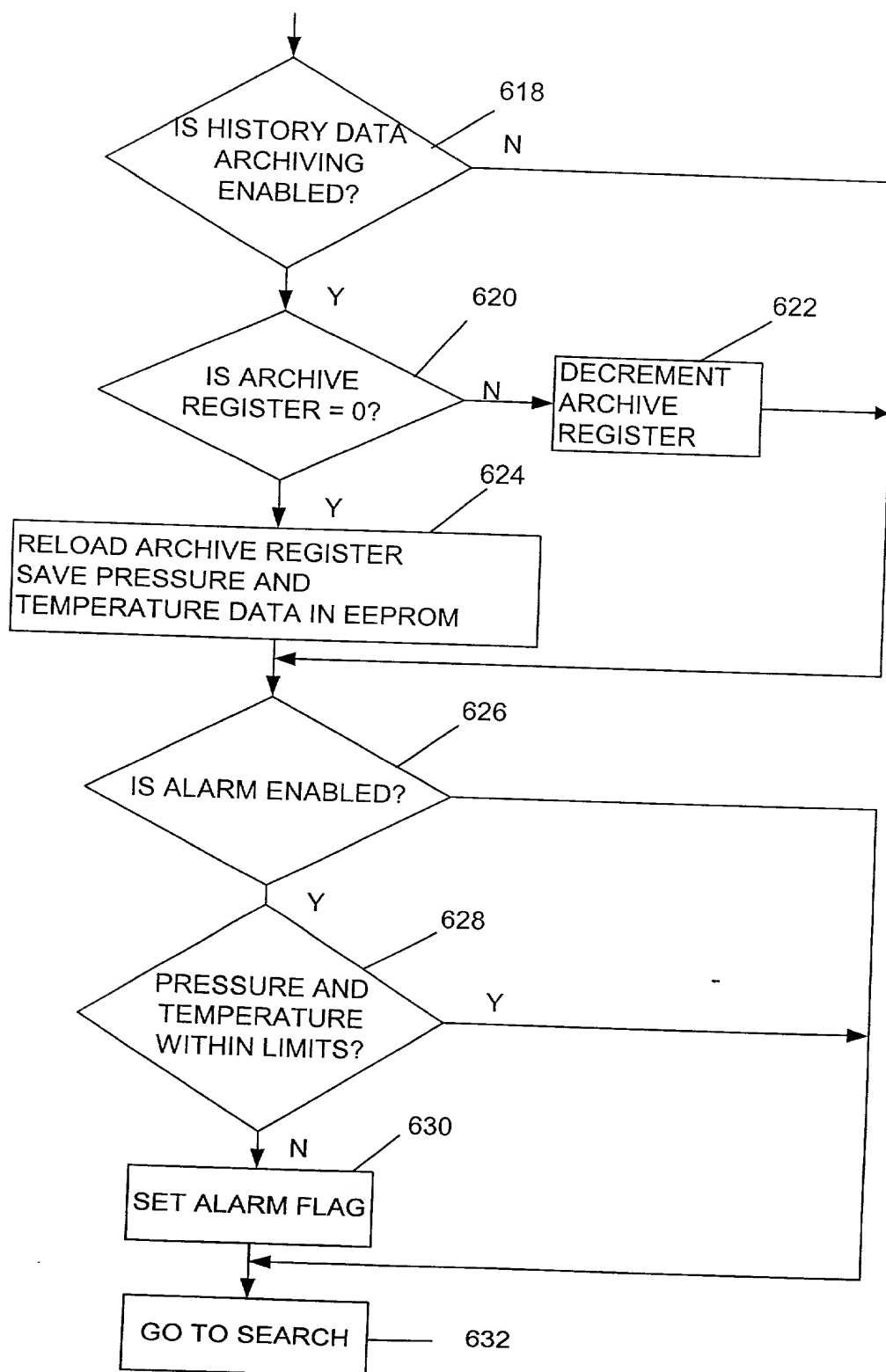
37/46
Fig. 41A

SENSOR PROCESSING

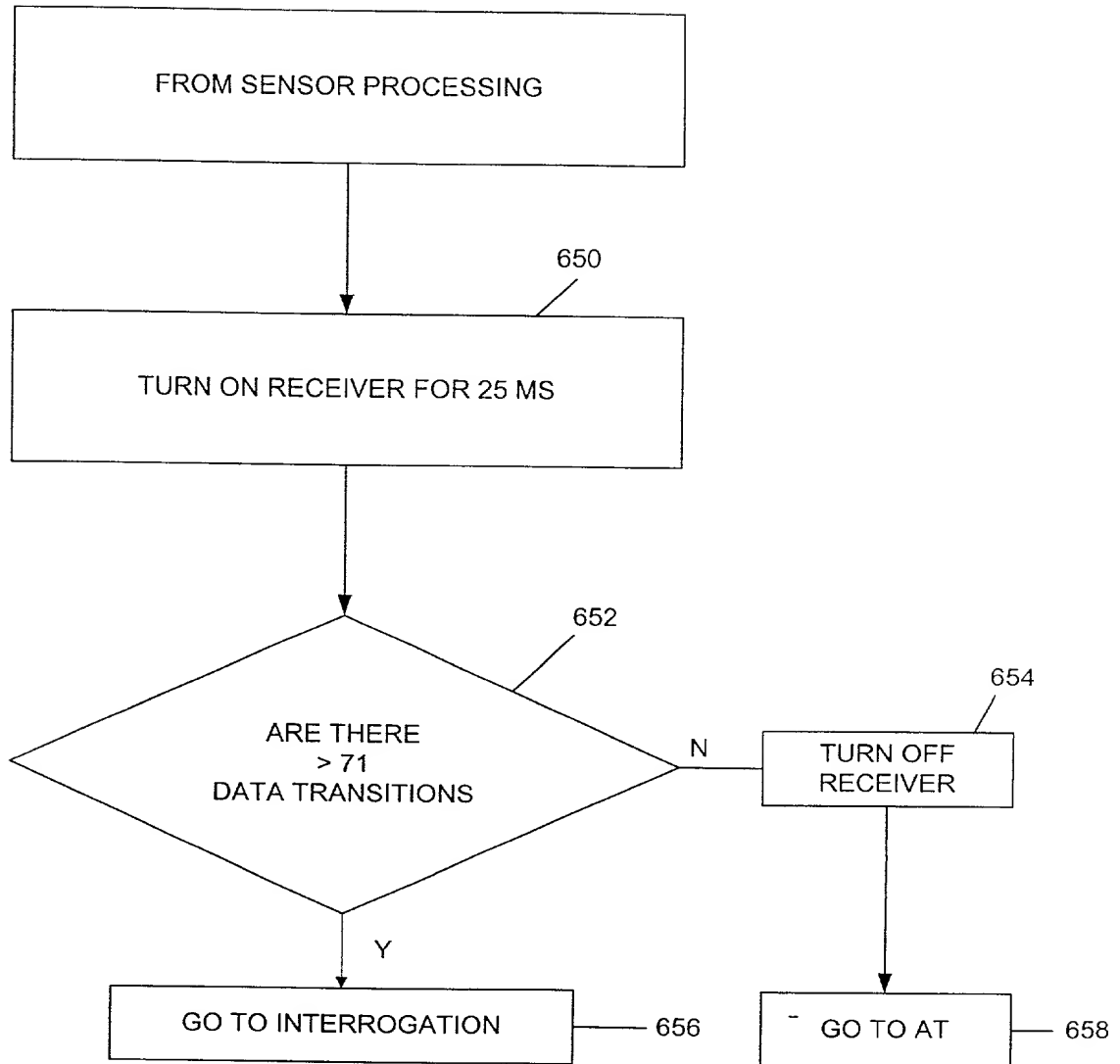


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Fig. 41B

SENSOR PROCESSING



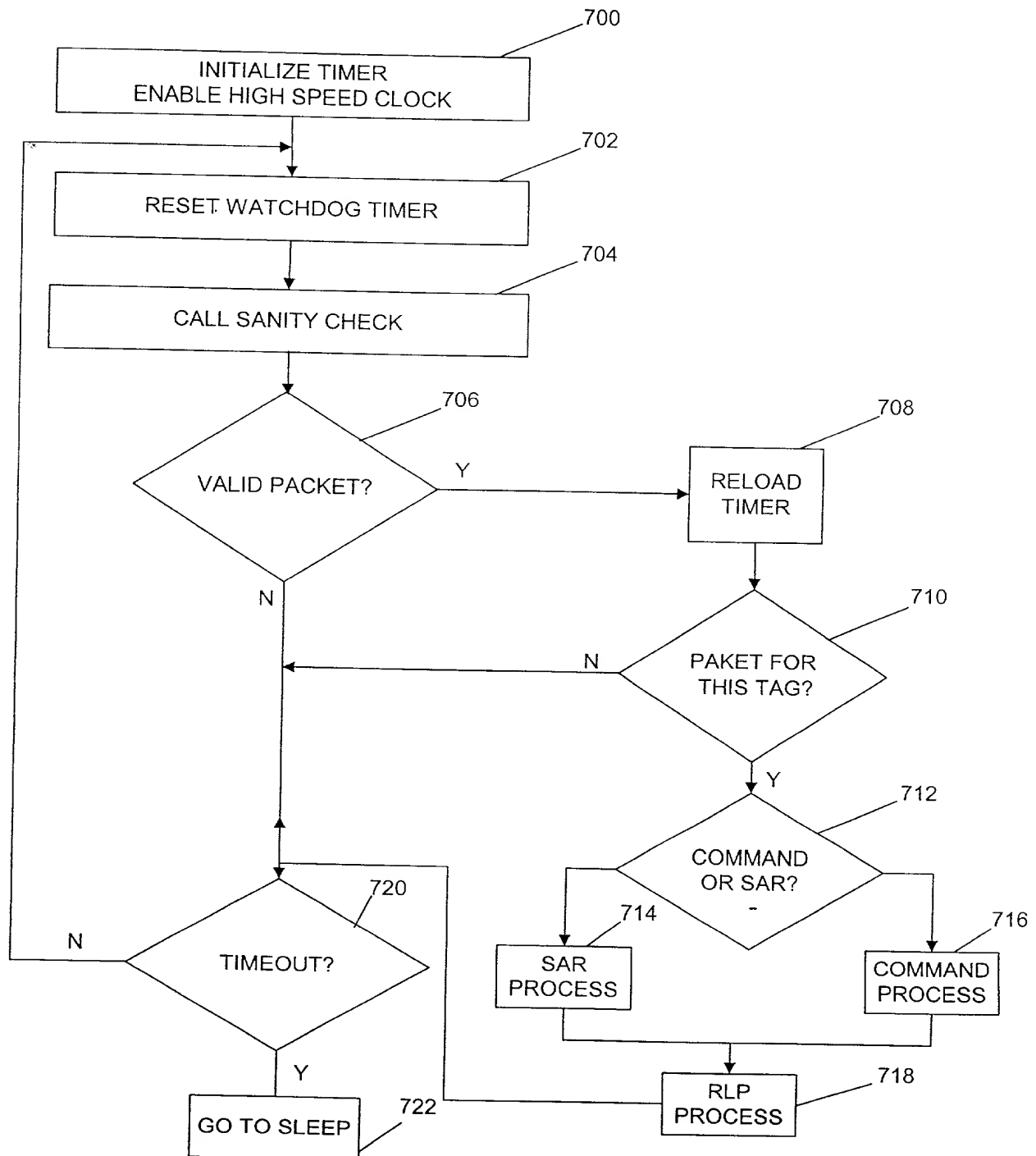
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Fig. 42
SEARCH



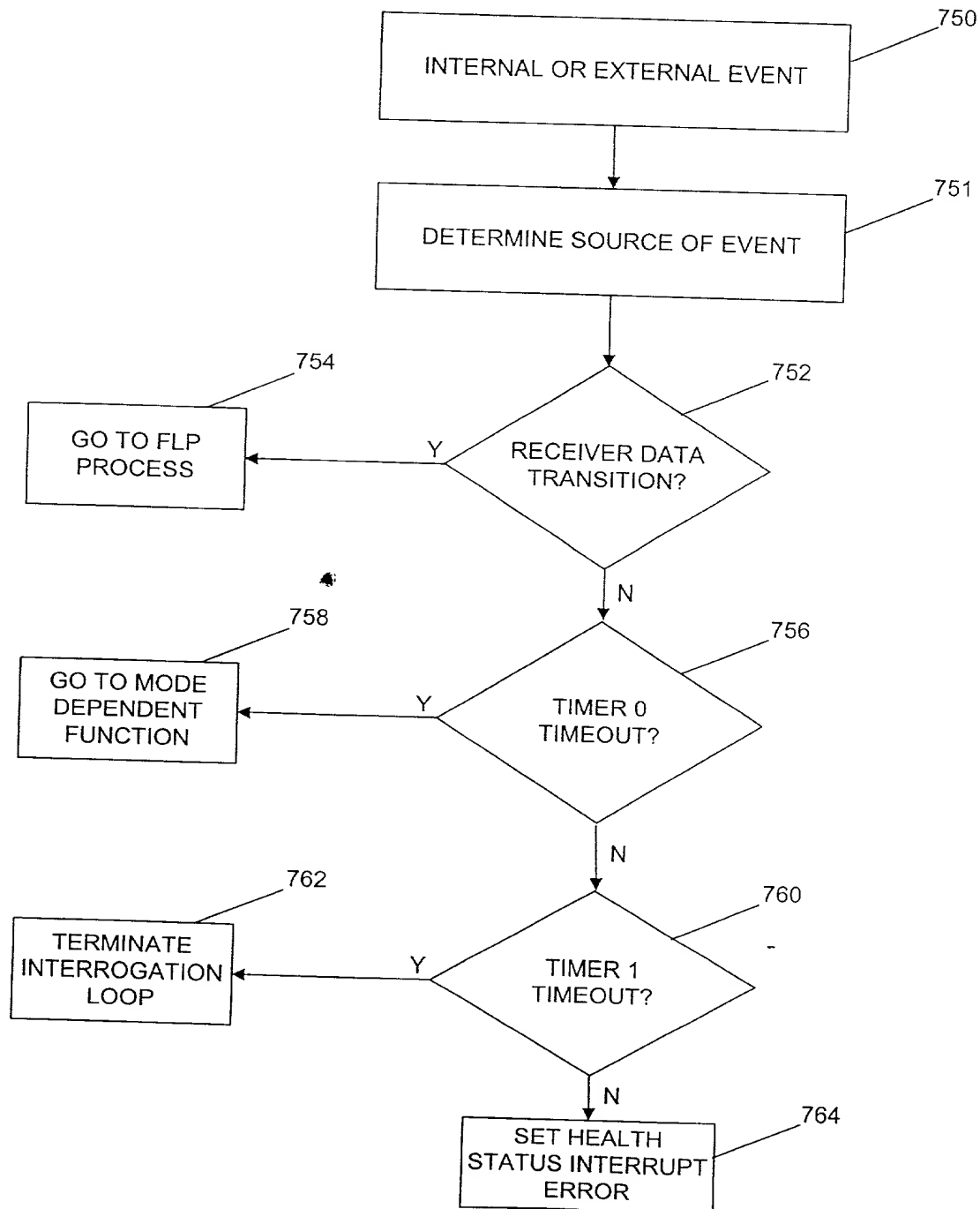
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Fig. 43

INTERROGATION

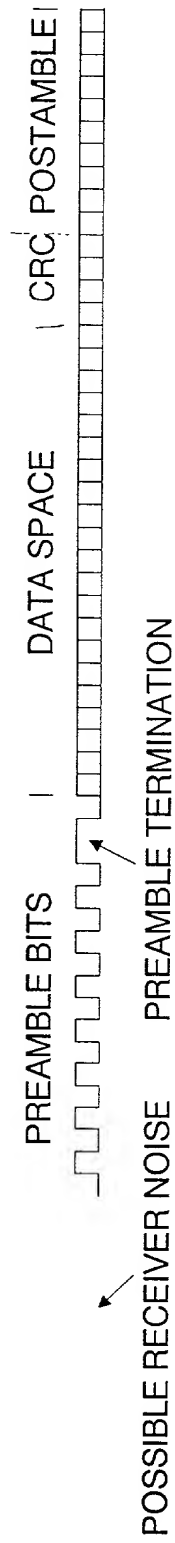


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Fig. 44
INTERRUPT SERVICE



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Fig. 45A



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Fig. 45B

PACKET PROCESSING (PRE-DISCRIMINATION)

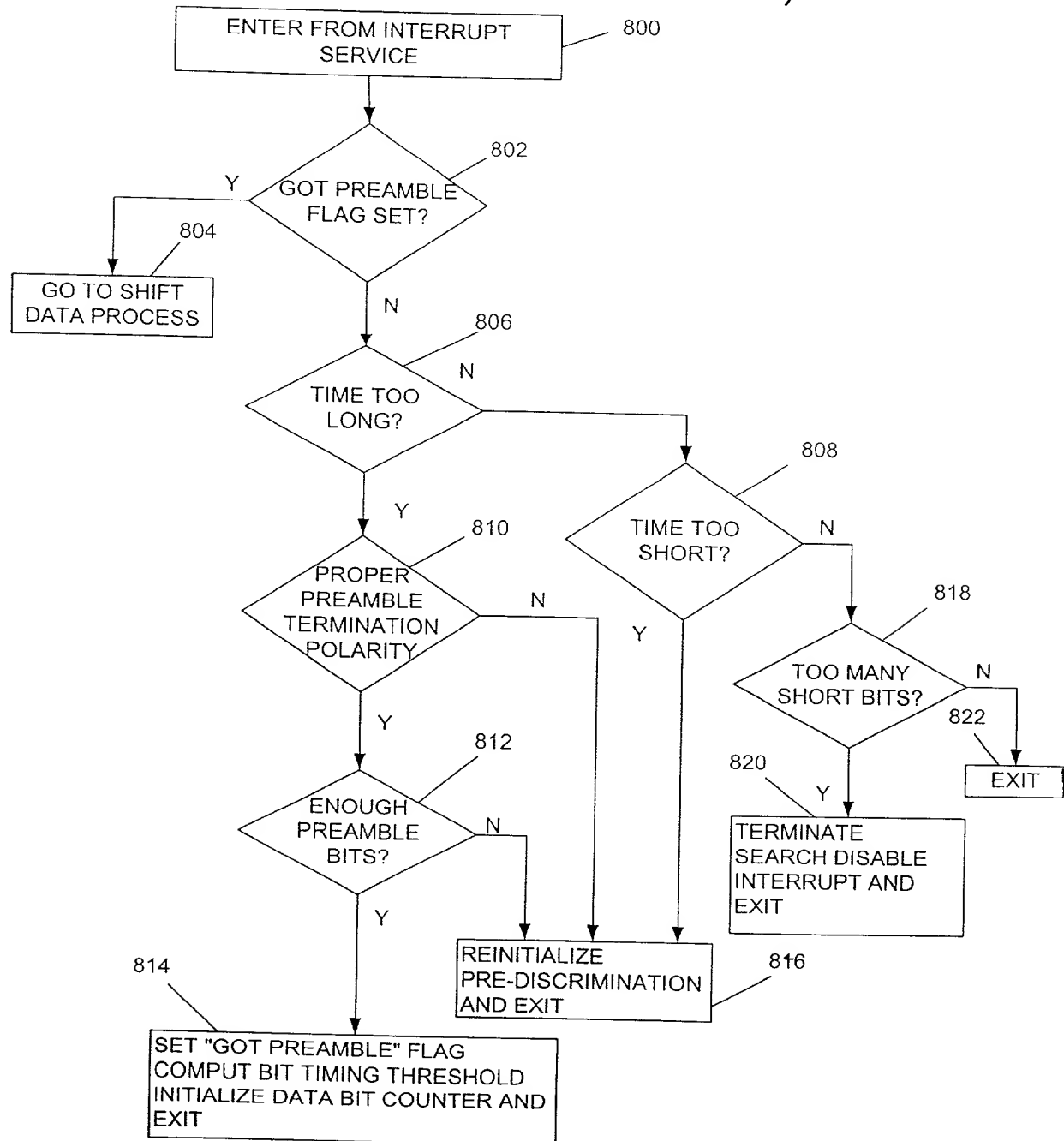
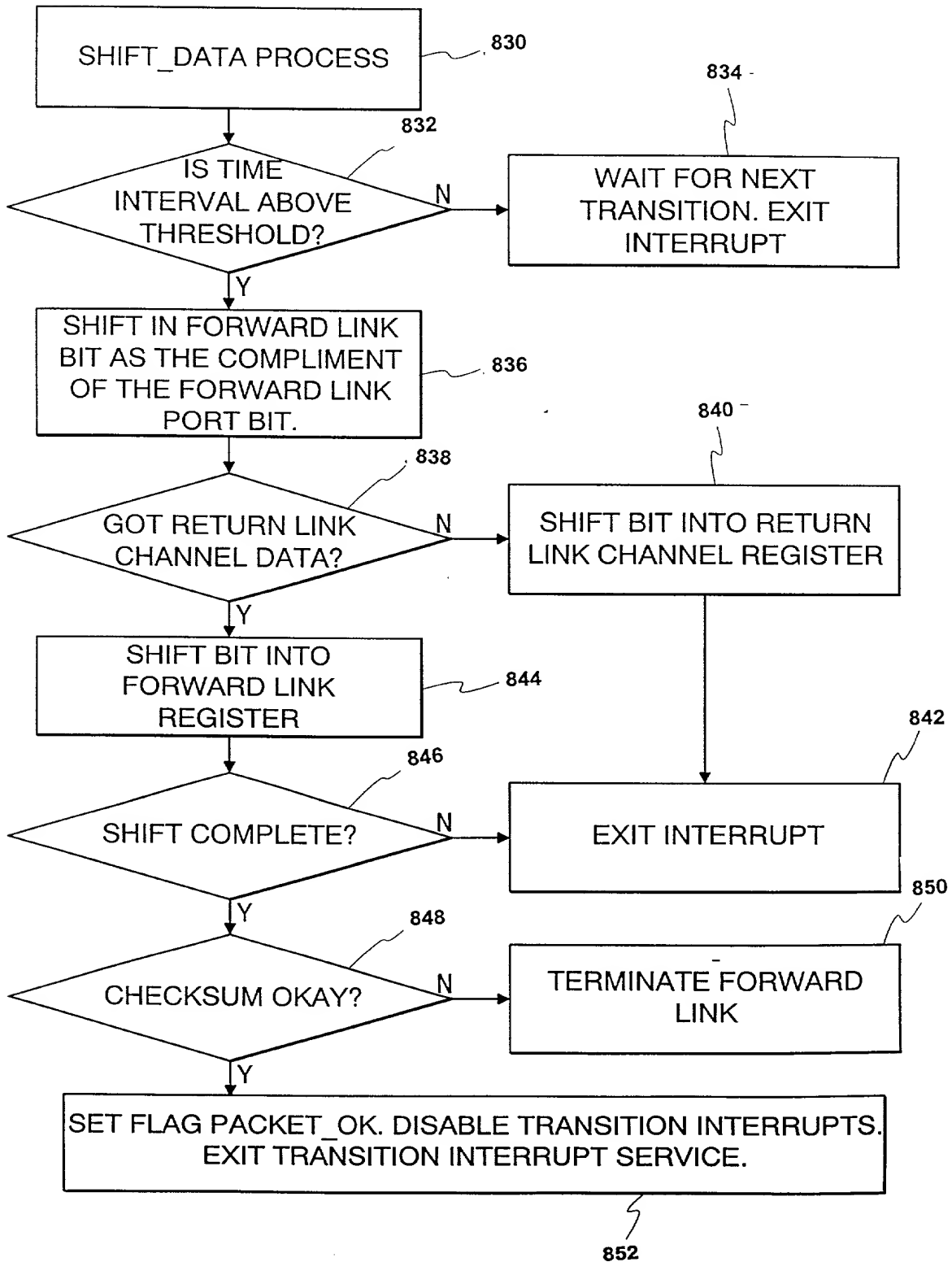


Fig. 45C

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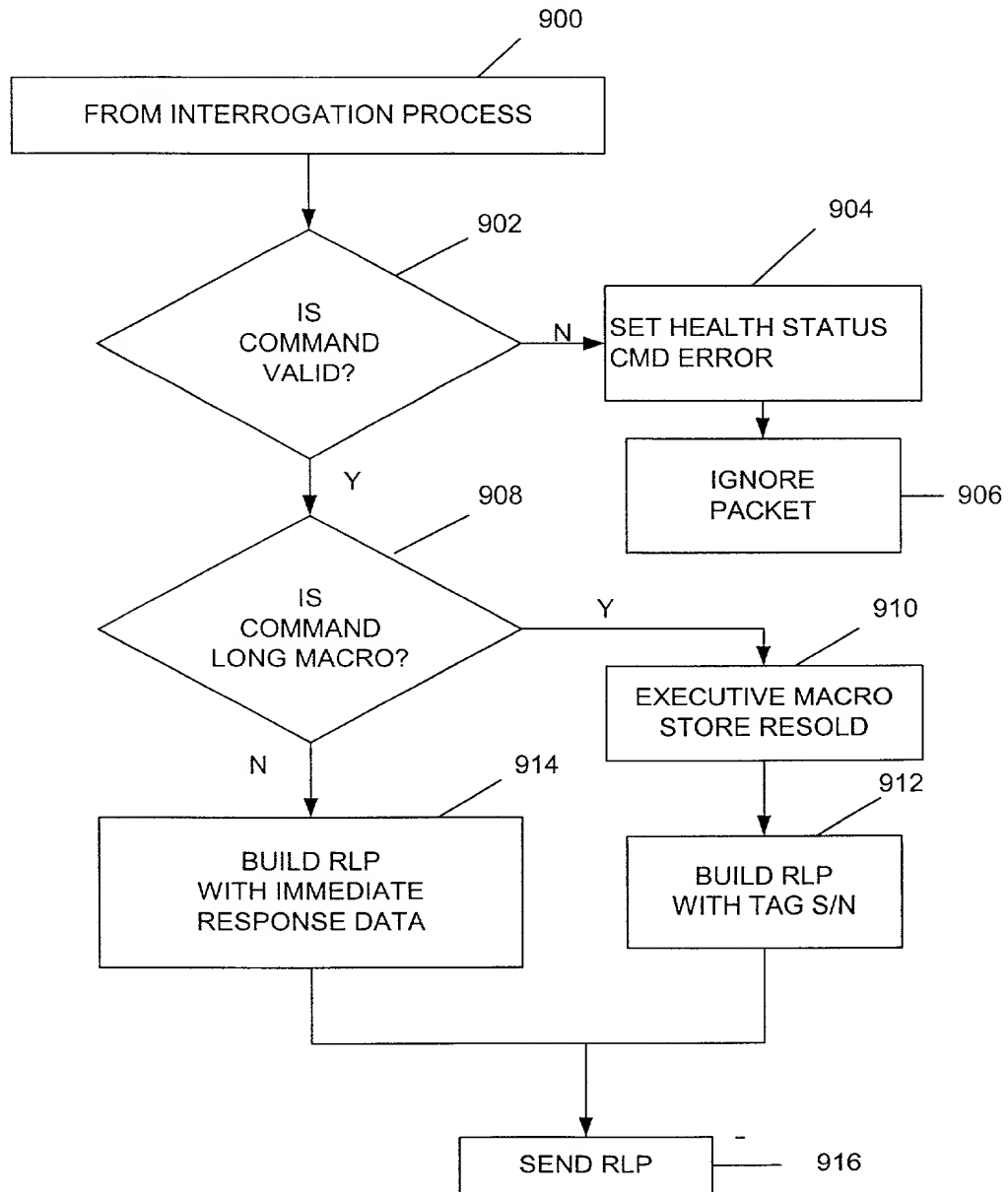
PACKET PROCESSING (SHIFT DATA PROCESS)



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Fig. 46

COMMAND ROUTINE



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Fig. 47

